

STUDIES ON THE FAUNA OF SURINAME AND OTHER
GUYANAS: No. 47.

GERRIDAE OF SURINAME AND THE AMAZON
WITH ADDITIONAL RECORDS OF OTHER NEOTROPICAL SPECIES

by

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The Gerridae can be separated from other families of Heteroptera by the following characteristics: tarsal claws anteapical, vertex without longitudinal groove and intermediate femur reaching distinctly caudal of apex of abdomen.

TABLE 3

SPECIES AND LOCALITIES OF GERRIDAE DISCUSSED IN THIS PAPER

Species	Cuba	Venezuela	Trinidad	Suriname	Pará	Amazonas	Mato Grosso	Rio Grande do Sul	Perú	figures
<i>Limnogonus aduncus</i>				x	x	x				138-139
<i>Limnogonus celeris</i>							x			142
<i>Limnogonus franciscanus</i>	x	x								133-134
<i>Limnogonus hyalinus</i>				x	x					135-136
<i>Limnogonus ignotus</i>				x			x			131
<i>Limnogonus lotus</i>				x		x	x			140
<i>Limnogonus lubricus</i>				x	x		x			141
<i>Limnogonus profugus</i>					x	x				132
<i>Limnogonus recurvus</i>					x					137
<i>Limnogonus visendus</i>				x	x	x	x			143
<i>Eurygerris fuscinervis</i>									x	
<i>Tachygerris adamsoni</i>				x	x	x				144-145
<i>Tachygerris opacus</i>		x				x				149
<i>Tachygerris surinamensis</i>				x	x	x				146-148
<i>Cylindrostethus erythropus</i>					x	x				154-156
<i>Cylindrostethus hungerfordi</i>				x	x					150-151
<i>Cylindrostethus linearis</i>					x	x				157-158
<i>Cylindrostethus palmaris</i>				x	x	x	x			152-153
<i>Brachymetra albinervis</i>				x	x	x				160
<i>Brachymetra lata</i>				x	x	x				161
<i>Brachymetra shawi</i>				x	x	x				162
<i>Brachymetra unca</i>			x							159
<i>Rheumatobates crassifemuresakii</i>				x		x				163-164
<i>Rheumatobates crass. schroederi</i>					x	x	x			165
<i>Rheumatobates klagei</i>						x				166-167
<i>Rheumatobates trinitatis</i>				x						168-169
<i>Halobatopsis platensis</i>							x	x		
<i>Ovatametra obesa</i>					x	x				
<i>Telmatometra fusca</i>				x						170-171
<i>Trepobates taylori</i>		x			x	x				

MATSUDA (1960) cites 52 genera and several subgenera of which 17 genera have representatives in the South American continent. As species of all these genera may be found in Suriname, a Key is given here. The author has tried to avoid some of the difficult characteristics introduced by HUNGERFORD & MATSUDA 1960. This Key is for the greater part based on those of KENAGA 1941.

KEY TO SOUTH AMERICAN GENERA OF GERRIDAE

- 1a. Eyes emarginated at the posterior part of the inner margin Fig. 156. . . . 2
- 1b. Eyes not emarginated, inner margin evenly rounded to nearly straight Fig. 160-161 7
- 2a. Antennae about as long as or longer than the body, fourth antennal segment distinctly longest, only macropterous specimens known *Tachygerris*
- 2b. Antennae shorter than body, fourth antennal segment not longest 3
- 3a. Body narrow, cylindrical, four times or more as long as broad, antennae short *Cylindrostethus*
- 3b. Body less than four times as long as broad, generally not cylindrical . . . 4
- 4a. First tarsal segment of foreleg about half as long as second 5
- 4b. Tarsal segments of foreleg about equal in length. 6
- 5a. Rostrum short, not reaching the base of prosternum. *Potamobates*
- 5b. Rostrum longer, at least reaching the base of the mesosternum. Body shining *Limnogonus*
- 6a. Pronotum not covering the entire mesonotum. Apices of connexivum without spines *Eurygerris*
- 6b. Pronotum covering meso- and metanotum. Apices of connexivum nearly always produced into distinct spines *Gerris*
- 7a. Tibia and first tarsal segment of middle leg with a fringe of long erect hairs, marine species *Halobates*
- 7b. Tibia and first tarsal segment of middle leg without a fringe of long erect hairs (some *Trepobates* have erect hairs on intermediate femur and tibia, these species are not marine) 8
- 8a. Second antennal segment shortest or subequal to third; second, third and fourth not subequal; first segment longest 9
- 8b. Second antennal segment not shortest or second, third and fourth subequal; first segment not always longest 17
- 9a. First tarsal segment of foreleg longer than second tarsal segment *Charmatometra*
- 9b. First tarsal segment of foreleg not longer than second 10
- 10a. Fore tarsus with apical segment at most twice as long as basal segment . . 12

- 10b. Fore tarsus with apical segment more than twice as long as basal segment. 11
- 11a. Pronotum with several distinct black longitudinal stripes *Eobates*
 11b. Pronotum at most with a median longitudinal dark stripe, most often only
 with infuscated margins *Brachymetra*
- 12a. Third antennal segment and posterior margin of eyes with long hairs. Male
 antennae not filiform. *Rheumatobates*
 12b. Third antennal segment and posterior margin of eyes without long hairs. Male
 with filiform antennae 13
- 13a. Third antennal segment more than twice as long as second and distinctly
 longer than first *Telmatometra*
 13b. Third antennal segment less than one and a half times as long as second,
 distinctly shorter than first 14
- 14a. First antennal segment much longer than the following two together
 *Trepobatoïdes*
 14b. First antennal segment not distinctly longer than the two following to-
 gether 15
- 15a. Middle tibia distinctly shorter than length of body. *Ovatametra*
 15b. Middle tibia about as long as or slightly longer than body length. . . . 16
- 16a. Eyes not extending beyond the middle of the propleurae in side view. Hind
 tibia distinctly less than twice as long as tarsus *Trepobates*
 16b. Eyes extending beyond the middle of the propleurae. Hind tibia more than
 twice as long as tarsus *Halobatopsis*
- 17a. Intermediate tibia the longest leg-segment *Metrobates*
 17b. Intermediate tibia not the longest leg-segment (only known from Central
 America) *Platygeris*

Gerris Fabricius, 1794 is cosmopolitan but scarce in South America.

Cylindrostethus Fieber, 1861, *Halobates* Eschscholtz, 1822 and *Limnogonus* Stål, 1868 are distributed throughout the entire tropics, reaching well into the subtropics.

Metrobates Uhler, 1871, *Rheumatobates* Bergroth, 1892 and *Trepobates* Uhler are widely distributed in the Western Hemisphere.

Brachymetra Mayr, 1865, *Potamobates* Champion, 1901, *Tachygerris* Drake, 1957 and *Telmatometra* Bergroth, 1908 have representatives in Central and the greater part of South America. Except for *Potamobates* which may belong to the next group, the greatest number of species in these genera is to be found in S. America.

Eobates Drake & Harris, 1934 and *Eurygerris* Hungerford & Matsuda, 1958 occur in Central and the N.W. part (Colombia, Ecuador, Perú and Bolivia) of South America. But for the occurrence of one species in Venezuela, *Potamobates* has this type of distribution.

Platygeris White, 1883 is restricted to Central America.

Charmatometra Kirkaldy 1899, *Halobatopsis* Bianchi, 1896, *Ovatametra* Kenaga,

1942 and *Trepobatooides* Hungerford & Matsuda, 1958 are restricted to South America; these genera contain only few species.

METHODS

Measurements were taken with the longitudinal and transverse axes of the animal in a horizontal plane, or, in case of antennal segments, with the longitudinal axis of the segment horizontally. Five specimens of each sex and each morph were measured if available. If there was apparently no difference in the measurements of a structure for different sexes or forms, the measurements were pooled. So in *Limnogonus lotus* the measurements cited for length and width of body are based on 5 specimens in each case, the length of the head, where no difference is made between males and females and which is not repeated under macropterous form is based on 20 measurements; the length of the antennal segments, where I differentiated between males and females, but which is not repeated under macropterous form, is based on 10 measurements for each sex. The humeral width of pronotum and the length of pronotum anteriorly or posteriorly to the humeral angles was, however, only measured in the macropterous form. If one wants to know exactly on what number of specimens a measurement is based it is necessary to check if there were 5 specimens of each sex and morph available, e.g. the median length of head, male, in the description of *Limnogonus aduncus* was based on 8 measurements as only 3 apterous males were studied.

Drawings were made with the aid of an ocular provided with a squared graticule, or in case of small details of genitalia, with a camera lucida.

Synonymy is not exhaustive, only the more important references are given.

In the distributional data an exclamation mark (!) indicates a new record.

KEY TO SPECIES OF *Limnogonus* PROBABLY OCCURRING IN SURINAME

- 1a. Pale markings on side margin of pronotum continued on anterior lobe, sometimes obsolete or reduced to a small spot

- behind each eye. In cases where the pale markings on anterior lobe are indistinct, the length of the first antennal segment is greater than the width of the head across eyes 9
- 1b. Side margins of anterior lobe of pronotum without evidence of pale lines. Length of first antennal segment subequal to or less than the width of the head (this section of the key applies to males only) 2
- 2a. Apterous 3
- 2b. Macropterous 6
- 3a. Pronotum projecting posteriorly, distinctly longer than broad, differentiated into two lobes. 4
- 3b. Pronotum not projecting, broader than long, no evidence of a hind lobe *L. visendus*
- 4a. Pronotum reaching to metanotum, completely covering mesonotum or nearly so. 5
- 4b. Pronotum reaching to the middle of mesonotum *L. lotus*
- 5a. Male, first genital segment narrow above; tapering posteriorly, apical margin not or scarcely notched at middle *L. lubricus*
- 5b. Male, first genital segment very broad above, sides almost parallel, hind margin distinctly notched at middle *L. celeris*
- 6a. Eyes globose, not longer than deep. Pronotum strongly constricted between the lobes. Front femur with an oval blackish spot on the outer (posterior) surface before apical third *L. lotus*
- 6b. Eyes longer than deep, pronotum less strongly constricted. Front femur nearly entirely dark along distal half of outer surface 7
- 7a. Male, second genital segment with a distinct tuft of pale hairs on each side. *L. visendus*
- 7b. Male, second genital segment without a distinct tuft of pale hairs on each side 8

- 8a. Male, first genital segment narrow above, tapering posteriorly, apical margin not or scarcely notched at middle . . . *L. lubricus*
- 8b. Male, first genital segment broad above, sides almost parallel, hind margin distinctly notched at middle. *L. celeris*
- 9a. Length of first antennal segment less than, or equal to the width of head across eyes 10
- 9b. Length of first antennal segment equal to or greater than the width of head across eyes 11
- 10a. Mesopleura broadly marked with reddish or russet brown along the upper sides. *L. ignotus*
- 10b. Mesopleura not marked with reddish brown
 *L. celeris* var. *magnus*
- 11a. Male 12
- 11b. Female 14
- 12a. First genital segment without an apical projection
 *L. franciscanus*
- 12b. First genital segment with an apical projection ventrally 13
- 13a. First genital segment projecting at middle ventrally as far as dorsally (Fig. 135) *L. hyalinus*
- 13b. First genital segment projecting less far (Fig. 138) *L. aduncus*
- 14a. Connexivum truncate at apex, not projecting beyond the corresponding abdominal tergite *L. hyalinus*
- 14b. Connexivum more or less projecting at apex, extending beyond last abdominal tergite 15
- 15a. Last abdominal sternite at middle rather sharply projecting backward. Connexival spines moderately long . . *L. aduncus*
- 15b. Last abdominal tergite at middle only slightly and roundly projecting backward. Connexival spines short
 *L. franciscanus*

***Limnogonus ignotus* Drake & Harris, 1934**

Limnogonus ignotus DRAKE & HARRIS, 1934, p. 205-206 (British Guiana, Bolivia, Paraguay, Argentina).

Limnogonous ignotus; KUITERT 1942, p. 129 (British Guiana, Perú, Bolivia, Paraguay).

GUYANA; SURINAME!, Suriname; BRASIL!, Mato Grosso; PERÚ, San Martín; BOLIVIA, Beni, Sta. Cruz; PARAGUAY, Guairá; ARGENTINA, Misiones.

SURINAME: Suriname, Paranam, 26.VII.1962, 1 ♀ apterous, 1 ♀ macrop-
terous; Paranam, small pools near 'Blauwe Meertjes', 29.VIII.1962, 14 ♂,
10 ♀ apt., 1 ♂, 3 ♀ macr. (P. H. van Doesburg jr., L.).

BRASIL: Mato Grosso, Serra Roncador, Igarapé near Acampamento, near
Km 125, A. 559, 17.VIII.1965, 1 ♂, 1 ♀ macr.; Chavantina, Rio das Mortes,
A. 561-7, 10.VIII.1965, 1 ♂ macr. (E. J. Fittkau, A.).

Goiás, Lagoa Bonita, near Brasília, A. 576-2, 3.X.1965, 1 ♀ apt. (Fittkau
(A)).

Apterous form:

Length, male 5.80-5.98-6.10; female 6.58-6.83-7.53; width of
head across eyes, male 1.22-1.23-1.25, female 1.30-1.31-1.32;
width across intermediate acetabula, male 1.68-1.69-1.70, female
2.00-2.06-2.30 mm.

Colour, dorsally brownish-black, vertex broadly fuscous-yellowish
laterally; two spots on and margins of anterior lobe of pronotum,
median longitudinal stripe on abdomen and longitudinal stripes
near margins of connexiva light brownish-yellow. Dorsal part of
mesopleuron broad reddish brown. Legs and antennae yellowish-
brownish. Silvery hairs at sides of body, and dorsally on inter-
mediate and posterior acetabula.

Length of head, 0.73-0.88-1.03; posterior width of vertex 0.55-
0.60-0.72 mm. Length of antennal segments, male I = 1.05-1.10-
1.19, II = 0.66-0.69-0.72, III = 0.68-0.71-0.73 (3rd segment not
always longer than second), IV = 1.00-1.09-1.19; female I = 1.17-
1.25-1.36, II = 0.71-0.80-0.88; III = 0.75-0.81-0.89; IV = 1.16-
1.24-1.30 mm. Length of pronotum, male 2.30-2.33-2.40, female
2.40-2.51-2.80; width of anterior femur, male 0.11-0.15-0.17, female
0.20-0.22-0.26; width of intermediate femur, male 0.25-0.27-0.28,

female 0.12–0.14–0.18; length of abdomen caudal to posterior coxae, male 1.70–1.74–1.88, female 2.00–2.13–2.20; length of posterior femur, male 3.80–3.88–4.00, female 3.80–3.98–4.15 mm. Pronotum with slight evidence of differentiation in anterior and posterior lobe.

Male, apex of abdomen Fig. 131.

Female, apex of connexivum with a distinct spine. First genital segment with latero-dorsal tufts of hair.

Macropterous form as apterous except:

Length, male 6.50–6.83–7.00, female 7.20–7.49–7.90; width of head across eyes, male 1.22–1.27–1.32, female 1.30–1.36–1.40; humeral width of pronotum, male 1.25–1.30–1.35, female 1.42–1.47–1.50; width across intermediate acetabula, male 1.70–1.79–1.89, female 1.96–2.08–2.22 mm.

Hemelytra dull brown to black, veins shining.

Length of pronotum, male 2.40–2.52–2.70, female 2.61–2.73–2.90 mm.

This species is recognized at once by the reddish brown upper part of the mesopleuron.

***Limnogonus profugus* Drake & Harris, 1930**

Limnogonus profugus DRAKE & HARRIS, 1930, p. 237–238 (Brasil, Paraguay).

Limnogonus profugus; DRAKE & HARRIS 1934, p. 209 (Brasil, Paraguay).

Limnogonus profugus; KUITERT 1942, p. 129 (Brasil).

BRASIL: Pará!, Amazonas, Mato Grosso, Goiás, Rio de Janeiro, São Paulo; PARAGUAY.

BRASIL: Amazonas, Upper Rio Negro, Missão S. Antonio, Caatinga, A. 484, 10.I.1963, 1 ♂, 2 ♀ macr. (E. J. Fittkau, A).

Pará, near Belém, Thomé-assu, S. 191, 1 ♂, 1 ♀ apt. (H. Sioli, A).

Apterous form:

Length, male 8.10, female 8.40; width of head, male 1.92, female 1.80; width across intermediate acetabula, male 2.80, female 2.75 mm.

Colour dorsally brown-blackish, U-shaped band posteriorly on vertex, central spot on anterior lobe and margins of pronotum, antennae and legs yellowish-brown. Silvery hairs on sides of body, dorsally on intermediate and posterior acetabula, four small patches on metanotum, lateral patches on 4th and 5th tergite and corresponding segments of connexivum.

Length of head, 1.30-1.34-1.42; posterior width of vertex, 0.82-0.90-0.98. Length of antennal segments, male I = 1.85-1.91, II = 1.18-1.23, III = 0.95-0.98, IV = 1.10-1.18; female I = 1.70-1.79-1.86, II = 1.16-1.22-1.30, III = 0.90-0.92-0.93, IV = 1.06-1.09-1.10. Length of pronotum 3.00; width of anterior femur, male 0.57-0.58, female 0.45-0.47-0.48; width of intermediate femur, male 0.22-0.24, female 0.20-0.21-0.23; length of abdomen caudal to posterior coxae, male 2.20, female 2.50; length of posterior femur, male 5.20, female 6.15 mm.

Male, apex of abdomen Fig. 2.

The apterous form can probably be separated from related species (*L. hyalinus*, *L. aduncus*) by the presence of four small silvery patches on metanotum.

Macropterous form, as apterous except:

Length, male 8.50, female 8.70-8.80; width of head, male 1.90, female 1.95-1.98; humeral width of pronotum, male 1.91, female 1.96-1.98; width across intermediate acetabula, male 2.68, female 2.86-2.96 mm.

Hemelytra dull dark brown, veins shining.

Length of pronotum, male 3.25, female 3.40 mm.

***Limnogonus franciscanus* (Stål, 1859)**

Gerris marginatus; GUÉRIN (nec Say) 1857, p. 415 (Cuba).

Gerris franciscanus STÅL, 1859, p. 265 (California).

Gerris guerini LETHIERRY & SEVERIN, 1896, p. 61.

Limnogonus guerini; DRAKE & HARRIS, 1934, p. 109 (Texas, California, México, West Indies).

Limnogonus franciscanus; DRAKE & HARRIS 1935, p. 2.

Limnogonus guerini; KUITERT 1942, p. 129 (México, British Honduras, Costa Rica, Perú, Antilles).

Limnogonus franciscanus; DE KORT-GOMMERS & NIESER 1969, p. 77-79 (Lesser Antilles).

U.S.A., California, Texas; MÉXICO, Tabasco, Chiapas; BRITISH HONDURAS; COSTA RICA; VENEZUELA!, Aragua; PERÚ. – GREATER ANTILLES; LESSER ANTILLES.

CUBA: Santiago de las Vegas, *P. 2127*, 11.XI.1958, 4 ♂, 3 ♀ macr. (P. H. van Doesburg jr. L).

VENEZUELA: Aragua, Maracay, *P. 2128*, 15.XI.1958, 1 ♂ macr. (van Doesburg, L).

***Limnogonus hyalinus* (Fabricius, 1803)**

Hydrometra hyalinus FABRICIUS, 1803, p. 258.

Limnogonus hyalinus; STÅL 1868, p. 133.

Limnogonus hyalinus; DRAKE & HARRIS 1934, p. 208-209 (Trinidad, Panamá, French Guiana, Brasil, Ecuador).

Limnogonus hyalinus; KUITERT 1942, p. 130 (Trinidad, British Guiana).

Limnogonus hyalinus; HYNES 1948, p. 345 (Trinidad).

PANAMÁ; TRINIDAD; GUYANA; SURINAME!, Nickerie, Suriname; GUYANE FRANÇAISE; BRASIL, Pará; ECUADOR.

SURINAME: Nickerie, Sipaliwini, 11.VI.1963, 1 ♀ apt., 1 ♀ macr. (P. H. van Doesburg jr., L). – Suriname, Zanderij, rivulet, *P. 55*, 28.VII.1958, 1 ♀ apt., 1 ♀ macr.; Zanderij, same, pool, 1 ♀ apt.; Zanderij, *P. 2206*, 9.V.1963 1 ♀ apt.; Zanderij, Carolinakreek, *P. 2013*, 29.VIII.1962, 1 ♂, 6 ♀ macr.; Parakreek near Hannover, *P. 1188*, 1961, 1 ♂, 3 ♀ macr.; Republiek, on Coropinakreek, *P. 2173*, 31.III.1963, 2 ♂, 3 ♀ macr.; Mooi Wana, 28.VI.1963, 2 ♀ macr. (van Doesburg, L).

Saramacca, Sabana, Tibiti Rivier, 26.I. 1964, 1 ♂ apt. (P. Leentvaar, L).

BRASIL: Pará, near Belém, Rio Acará-mirim, Thomé-assú, *S. 174*, 9.XI.1946, 1 ♀ macr. (H. Sioli, A).

Apterous form:

Length, male 9.20, female 8.00-8.65-9.50; width of head, male 1.80, female 1.72-1.78-1.90; width across intermediate acetabula, male 2.75, female 2.63-2.71-2.92 mm.

Colour dorsally, brown – black. Sides of head, inner margin of eyes, sublateral longitudinal stripes and posterior transverse stripe on vertex, short submedian longitudinal stripes on anterior lobe,

median longitudinal stripe on posterior lobe, lateral margins of pronotum, hind margin of mesopleuron, dorsal patch on meta-pleuron and median dorsal stripe on abdominal segments 2-7 yellowish. Ventral side predominantly yellowish. Silvery hairs along sides of head, on dorsal surface of acetabula, longitudinal subdorsal stripe on mesopleuron, on outer side of segment 1-4 or 5 and inner side of segment 1-3 or 4 of connexivum, laterally on abdominal tergites 1-6.

Median length of head 1.28-1.31-1.42; posterior width of vertex 0.78-0.81-0.85. Length of antennal segments, male I = 1.86-1.96-2.10, II = 1.35-1.46-1.65, III = 1.16-1.23-1.35, IV = 1.79-1.85-2.00; female I = 1.63-1.82-2.05, II = 1.20-1.32-1.45, III = 1.10-1.17-1.28, IV = 1.68-1.71-2.02 mm. Median length of pronotum 3.20-3.40-3.70; width of anterior femur, male 0.40-0.43-0.47, female 0.30-0.33-0.36; width of intermediate femur, male 0.21-0.23-0.24, female 0.20-0.22-0.24 mm.

Anterior femur yellowish with a ventral dark brown stripe over entire length and dorsally a shorter brown stripe. Apex of connexivum bluntly projecting in male, very slightly projecting in female, where it does not or hardly reach caudally of the median part of hind margin of last abdominal sternite. First genital segment of male deeply incised laterally (Fig. 5), apical ventral part bent downwards.

Macropterous form as apterous except:

Length, male 9.20-9.33-9.60, female 9.11-9.63-10.01; width of head, male 1.76-1.78-1.79, female 1.70-1.75-1.80; humeral width of pronotum, male 1.87-1.88-1.90, female 1.85-1.92-1.98; width across intermediate acetabula, male 2.63-2.65-2.68, female 2.70-2.79-2.88; median length of pronotum, male 3.56-3.62-3.71, female 3.50-3.60-3.69 mm.

Hemelytra dull, dark brown to blackish, with shining veins.

This species is very similar to *L. aduncus* and *L. recurvus*, the male genital segments, however, show distinct differences. In females the apex of the connexivum is slightly more projecting in *L. hyalinus* than in the other two species mentioned.

***Limnogonus recurvus* Drake & Harris, 1930**

Limnogonus recurvus DRAKE & HARRIS, 1930, p. 236–237 (Brasil).

Limnogonus recurvus; DRAKE & HARRIS 1934, p. 210–211 (Brasil).

Limnogonus recurvus; KUITERT 1942, p. 130 (Brasil, Bolivia).

BRASIL, Amazonas, Pará, Goiás; BOLIVIA.

BRASIL: Pará, Upper Rio Paru de Oeste, pool. *Sa. 845*, 9.I.1961, 1 ♂ macr. (W. Sattler, A).

The single macropterous male seen has the following characteristics:

Length 8.00, width of head 1.61; humeral width of pronotum 1.81; width across intermediate acetabula 2.33 mm.

Colour, dorsally brown; vertex with two submedian longitudinal stripes posteriorly connected by a transverse stripe; two short submedian longitudinal stripes and margins of pronotum, legs and antennae yellowish to light brown. Silvery hairs laterally on body and on dorsal side of intermediate and posterior acetabula. Hemelytra dull with shining veins.

Length of antennal segments I = 1.62, II = 1.25, III = 1.00, IV = 1.41 mm. Posterior width of vertex 0.70, median length of head 1.10, median length of pronotum 3.06, width of anterior femur 0.42 and width of intermediate femur 0.21 mm.

First genital segment strongly swollen, and with a stout recurved hook at posterior margin (Fig. 137).

This species is very similar to *L. aduncus* but the male can easily be separated by the differences in the male genital segments.

***Limnogonus aduncus* Drake & Harris, 1933**

Limnogonus aduncus DRAKE & HARRIS, 1933, p. 110 (Brasil).

Limnogonus aduncus; DRAKE & HARRIS 1934, p. 209–210 (Trinidad, British Guiana, Brasil, Ecuador, Paraguay).

Limnogonus aduncus; KUITERT 1942, p. 130 (Trinidad, Canal Zone, Boliva, Perú, Brasil).

Limnogonus aduncus; ROBACK 1966, p. 212 (Perú).

CANAL ZONE; VENEZUELA!, Aragua; TRINIDAD; GUYANA; SURINAME!, Nickerie, Suriname; BRASIL, Pará, Amazonas; ECUADOR; PERÚ, Loreto, San Martín, La Libertad (? San Pedro); BOLIVIA, Beni, Sta. Cruz; PARAGUAY.

VENEZUELA: Aragua, Maracay, *P. 2128*, 15.XI.1958, 12 ♂, 4 ♀ macrop-
terous (P. H. van Doesburg jr., L).

SURINAME: Nickerie, Coeroeni Island, waterside, *P. 1087*, X.1959, 1 ♀
macr. (S. Ligori, L).

Suriname, Paramaribo, 14.II.1958, 1 ♂, 1 ♀ macr.; Paramaribo, Cul-
tuurtuin, cistern in entomological glass-house, *P. 125*, 4.X.1958, 1 ♀ macr.;
same, on ditch. *P. 128*, 10.X.1958, 4 ♂ macr.; same, 20.VII.1960, 1 ♂ ap-
terous, 1 ♀ macr.; Domburg, La Rencontre, abandoned cocoa-plantation, on
small pond, *P. 38*, 29.VI.1958, 3 ♀ macr.; Gansee, 20.X.1959, 1 ♂ macr.
(van Doesburg, L); Brokopondo, Brokobbakka, experimental garden, *P. 1189*,
1961, 1 ♂ macr. (van Hoof, L); Afobakka, sideroad near Brownsweeg, pool,
20.XII.1964, 3 ♂, 8 ♀ macr. (D. C. Geijskes, L).

BRASIL: Amazonas, Manaus, Igarapé castanha, *A. 000*, 22.X.1965, 1 ♂
macr. (E. J. Fittkau, A); Rio Solimões, S. Antonio do Iça, Igarapé afluyente
do Cano do Lago Grande, *S. 317*, 7.X.1959, 1 ♂ macr. (H. Sioli, A).

Pará, Santarém, Igarapé Irurá, *S. 195*, 25.VI.1947, 1 ♀ apt.; Rio Tapajós,
Fordlandia, Igarapé da Prainha, *S. 245-a*, 9.IX.1950, 2 ♂, 2 ♀ apt., 1 ♀
macr.; Zona Bragantina, Igarapé Salgado, *S. 253-a*, 21.III.1951, 1 ♀ macr.
(Sioli, A); Serra Tumucumaque, Igarapé Uruchtare, *Sa. 681*, 7.III.1961,
1 ♀ macr. (W. Sattler, A).

Apterous form:

Length, male 7.50–8.00–9.05, female 8.40–8.45–8.50; width of
head, male 1.58–1.69–1.80, female 1.65–1.66–1.67; width across
intermediate acetabula, male 2.30–2.47–2.72, female 2.69–2.72–
2.76 mm.

Colour, dorsally, dark brown to blackish, sides of head, sublateral
longitudinal stripes and transverse stripe at posterior margin of
vertex, inner margin of eyes, two short submedian stripes on
anterior lobe, narrow median stripe on posterior lobe, lateral
margins of posterior lobe and short stripes on anterior lobe of
pronotum yellowish. Sides of head, antero-lateral margins of pro-
notum, ventral half of pleurae, more dorsal stripe on mesopleuron
extending to intermediate acetabula, short stripe at posterior
margin of mesopleuron, dorsal part of posterior acetabula, outer
side of connexivum, inner side of segment 1–4 of connexivum and
lateral stripes on dorsum of abdomen with silvery pubescence.

Median length of head, male 0.95–1.06–1.21, female 1.15–1.20–1.25; posterior width of vertex 0.72–0.76–0.80 mm. Length of antennal segments, male I = 1.77–1.97–2.10, II = 1.40–1.60–1.72, III = 1.10–1.22–1.28, IV = 1.80–1.92–2.02; female I = 1.70–1.86–2.00, II = 1.30–1.49–1.68, III = 1.20–1.27–1.40, IV = 1.80–1.96–2.05 mm. Median length of pronotum, 3.00–3.16–3.45; width of anterior femur, male 0.38–0.40–0.42, female 0.30–0.31–0.35; width of intermediate femur, male 0.22–0.23–0.26, female 0.21–0.22–0.25 mm. Anterior femur yellowish, ventrally a longitudinal black stripe running over nearly the entire length. Posterior half of mesosternum and metasternum flattened, with longer pilosity at sides. Dorsum of abdomen with a median longitudinal yellow stripe, reaching the hind margin of the first genital segment. Apex of connexivum distinctly though bluntly projecting. Venter of first genital segment in male slightly swollen in the middle, with a small but distinct recurved spine on hind margin (Fig. 138).

Female, apex of abdomen, Fig. 139.

Macropterous form as apterous except:

Length, male 9.20–9.48–9.80, female 9.30–9.66–10.20; humeral width of pronotum, male 1.87–1.92–1.98, female 1.90–2.00–2.12; width across intermediate acetabula, male 2.66–2.71–2.80, female 2.72–2.93–3.10; median length of head, male 1.16–1.23–1.30, female 1.20–1.23–1.30; median length of pronotum, male 3.60–3.65–3.80, female 3.62–3.75–4.00 mm.

Hemelytra pruinose brownish-black, veins shining.

***Limnogonus lubricus* White, 1879**

Limnogonus lubricus WHITE, 1879, p. 489 (Brasil).

Limnogonus lubricus; DRAKE & HARRIS 1934, p. 212 (British Guiana, Suriname).

Limnogonus lubricus; KUITERT 1942, p. 128 (British Guiana, Brasil, Perú, Bolivia).

GUYANA; SURINAME, Suriname; BRASIL, Pará, Amazonas, Mato Grosso; PERÚ; BOLIVIA, Beni.

SURINAME: Suriname, Paranam, small pool near "Blauwe Meertjes", P. 2005, 29.VIII.1962, 2 ♂, 1 ♀ apt.; Plantage Mariënborg, on pothole,

P. 2179, 14.IV.1963, 5 ♂, 7 ♀ apt.; Republiek, Zwamp Berseba, 3.VI.1963, 2 ♂, 1 ♀ apt. (P. H. van Doesburg jr., L).

BRASIL: Pará, Rio Trombetas, 50 km N. of Oriximina, Lago Salgado, Cabeceiro do Molha, *B. 29*, 21.IV.1948, 1 ♀ apt. (R. Braun, A); Santarém, Mapiri, *S. 148*, 28.VI. 1946, 1 ♂, 1 ♀ macr.; Rio Tapajós, Itaituba, *S. 173*, 13.VIII.1946, 1 ♀ apt.; same, upstream Fordlandia, Lago Timbó, *S. 220*, 11.I.1948, 1 ♂ apt. (H. Sioli, A).

Mato Grosso, Rio das Mortes, Chavantina, *A. 561-8*, 10.VIII.1965, 1 ♂ macr.; Source region of Rio Xingu, R. Totoari, *A. 573-1*, 1.IX.1965, 1 ♂ macr. (E. J. Fittkau, A).

Apterous form:

Length, male 3.80-3.97-4.20, female 4.50-4.74-5.00; width of head, male 1.08-1.10-1.15, female 1.16-1.20-1.30; width across intermediate acetabula, male 1.51-1.66-1.89, female 1.80-1.96-2.16 mm.

Colour, dorsally dark brown to black, two small spots on vertex (sometimes indistinct), posterior margin of vertex, central spot on anterior lobe and margins of posterior lobe of pronotum, antennae and legs light brown to yellow. Silvery hairs on sides of body, dorsally near hindmargin of mesopleuron, dorsally on intermediate and posterior acetabula, all abdominal tergites and corresponding segments of connexivum.

Length of head 0.61-0.72-0.98; posterior width of vertex 0.48-0.54-0.67 mm. Length of antennal segments, male I = 0.87-0.91-1.00, II = 0.49-0.52-0.57, III = 0.48-0.53-0.60, IV = 0.62-0.66-0.70; female I = 0.92-0.98-1.05, II = 0.52-0.60-0.64, III = 0.55-0.59-0.61, IV = 0.67-0.73-0.78 mm. Length of pronotum, male 1.50-1.58-1.71, female 1.72-1.80-1.92; width of anterior femur, male 0.21-0.26-0.28, female 0.22-0.25-0.29; width of intermediate femur, male 0.10-0.11-0.12, female 0.11-0.12-0.14 mm. Pronotum distinctly differentiated in anterior and posterior lobe, which is parallel sided and broadly rounded. Length of abdomen caudal to posterior coxae, male 0.80-0.85-0.92, female 1.10-1.18-1.28; length of posterior femur, male 2.10-2.66-3.05, female 3.10-3.23-3.50 mm.

Male, first genital segment long, slightly tapering towards apex, truncate not notched (Fig. 141).

Macropterous form as apterous except:

Length, male 4.10–4.45–4.60, female 5.10–5.38–5.80; width of head, male 1.05–1.09–1.12, female 1.15–1.24–1.36; humeral width of pronotum, male 1.11–1.17–1.25, female 1.50–1.60–1.81; width across intermediate acetabula, male 1.52–1.58–1.65, female 2.00–2.13–2.32 mm.

Hemelytra distinctly lighter than pronotum, brownish, veins slightly darker.

Length of pronotum, male 1.61–1.70–1.78, female 1.95–2.07–2.20 mm.

***Limnogonus lotus* White, 1879**

Limnogonus lotus WHITE, 1879, p. 488 (Brasil).

Limnogonus lotus; DRAKE & HARRIS 1934, p. 213 (British Guiana, Brasil).

Limnogonus lotus; KUITERT 1942, p. 129 (British Guiana, Brasil, Perú).

GUYANA; SURINAME!, Saramacca, Suriname; BRASIL, Pará, Amazonas, Mato Grosso!, Goiás!; PERÚ, Huánuco.

SURINAME: Saramacca, Sabana, Tibiti Rivier, 26.I.1964, 1 ♀ macr. (P. Leentvaar, L).

Suriname, Republiek, on Coropinakreek, P. 2173, 31.III.1963, 1 ♂ macr.; Sarakreek, Adjama Kondre, 16.XII.1963, 1 ♂, 1 ♀ apt., 6 ♂, 2 ♀ macr. (P. H. van Doesburg jr., L).

BRASIL: Amazonas, Rio Solimões, 1 hour downstream of Sta. Rita do Weil, A. 235, 25.VIII.1961, 8 ♂, 5 ♀ apt.; Lower Rio Negro, R. Cuieiras, Igarapé da Arara, A. 410–1, 22.XI.1962, 3 ♂, 6 ♀ apt. (E. J. Fittkau, A).

Mato Grosso, Source-region of Rio Xingu, Igarapé Garapú, A. 565–2, 24.VIII.1965, 3 ♂, 4 ♀ apt.; same, Lago Garapú, A. 566–1, 26.VII.1965, 12 ♂, 9 ♀ apt., 4 ♂, 2 ♀ macr.; same, Rio Totoari, A. 573–1, 1.IX.1965, 2 ♂ 2 ♀ macr. (Fittkau, A).

Goiás, Lagoa Bonita near Brasília, A. 576–2, 3.X.1965, 1 ♂, 1 ♀ apt. (Fittkau, A).

Apterous form:

Length, male 5.50–5.69–5.90, female 5.72–5.94–6.10; width of head, male 1.53–1.58–1.62, female 1.60–1.64–1.70; width across intermediate acetabula, male 1.98–2.06–2.10, female 2.30–2.39–2.46 mm.

Colour, dorsally, brownish-black. Posterior margin of head, a

central spot on anterior lobe, and margin of pronotum, antennae and legs brownish-yellow. Silvery hairs on lower part of sides, a narrow stripe along sides of mesonotum, a small patch on mesopleuron dorsally of intermediate acetabula, dorsal side of intermediate and posterior acetabula, a small patch postero-laterally on metanotum, the greater part of abdominal tergites 2-5 and the corresponding connexival segments.

Length of head 0.90-1.13-1.25, posterior width of vertex 0.80-0.81-0.85 mm. Length of antennal segments, male I = 1.10-1.20-1.30, II = 0.73-0.79-0.88, III = 0.61-0.64-0.71, IV = 0.83-0.89-0.92; female I = 1.12-1.28-1.35, II = 0.72-0.85-0.98, III = 0.62-0.71-0.80, IV = 0.85-0.92-1.01 mm. Length of pronotum, male 1.50-1.59-1.63, female 1.72-1.78-1.81 mm. Anterior lobe of pronotum distinctly differentiated, apex of pronotum reaching about halfway mesonotum. Width of anterior femur, male 0.38-0.40-0.41, female 0.38-0.40-0.41; width of intermediate femur, male 0.14-0.16-0.18, female 0.15-0.17-0.19; length of abdomen caudal to posterior coxae, male 1.10-1.15-1.20, female 1.18-1.22-1.30; length of posterior femur, male 4.05-4.24-4.50, female 4.30-4.38-4.43 mm.

Male, apex of abdomen Fig. 140.

Macropterous form as apterous except:

Length, male 6.20-6.42-6.60, female 6.53-6.78-7.06; width of head, male 1.60-1.62-1.65, female 1.52-1.66-1.70; humeral width of pronotum, male 1.58-1.62-1.68, female 1.60-1.71-1.80; width across intermediate acetabula, male 2.05-2.09-2.12, female 2.16-2.33-2.60; length of pronotum, male 2.42-2.50-2.60, female 2.50-2.59-2.70 mm.

Hemelytra brownish with darker veins.

***Limnogonus celeris* Drake & Harris, 1934**

Limnogonus celeris DRAKE & HARRIS, 1934, p. 214-215 (Paraguay).

Limnogonus celeris; KUITERT 1942, p. 128 (Paraguay).

BRAZIL!, Mato Grosso; PARAGUAY, Guairá.

BRASIL: Mato Grosso, Source-region of Rio Xingu, Igarapé Garapú, A. 565-2, 24.VIII.1965, 6 ♂, 4 ♀ apt. 2 ♂, 2 ♀ macr. (E. J. Fittkau, A).

Apterous form:

Length, male 4.20-4.46-4.60, female 4.60-4.82-5.08, width of head, male 1.20-1.24-1.29, female 1.25-1.28-1.37; width across intermediate acetabula, male 1.58-1.64-1.72, female 1.88-1.93-2.10 mm.

Colour, dorsally, brown-blackish, transverse band posteriorly on vertex, central patch on anterior lobe, margins of posterior lobe of pronotum, legs and antennae yellowish-brown. Silvery hairs on sides of body, dorsally on intermediate and posterior acetabula, abdominal segments 1-5 and connexival segments 1-6.

Length of head, 0.70-0.79-0.88, posterior width of vertex, 0.52-0.58-0.67 mm. Length of antennal segments, male I = 0.90-0.97-1.02, II = 0.54-0.59-0.60, III = 0.50-0.55-0.59, IV = 0.67-0.69-0.72; female I = 0.98-1.02-1.10, II = 0.58-0.62-0.70, III = 0.53-0.58-0.60, IV = 0.60-0.70-0.75 mm. Length of pronotum, male 1.60-1.74-1.90, female 1.75-1.87-2.00; width of anterior femur, male 0.28-0.29-0.30, female 0.28-0.29-0.30; width of intermediate femur, male 0.10-0.11-0.12, female 0.11-0.12-0.13; length of abdomen caudal to posterior coxae, male 0.92-0.98-1.06, female 0.90-1.08-1.23; length of posterior femur, male 3.30-3.33-3.40, female 3.40-3.45-3.50 mm.

Macropterous form as apterous except:

Length, male 5.20, female 5.40; width of head, male 1.23, female 1.30; humeral width of pronotum, male 1.20, female 1.32-1.35; width across intermediate acetabula, male 1.68, female 1.83-1.90.

Hemelytra dark brown with a lighter transverse band across the second quarter basally.

***Limnogonus visendus* Drake & Harris, 1934**

Limnogonus visendus DRAKE & HARRIS, 1934, p. 215 (Brasil).

Limnogonus visendus; KUITERT 1942, p. 127 (Brasil).

Limnogonus visendus; ROBACK 1966, p. 212 (Perú).

SURINAME!, Nickerie, Suriname; BRASIL, Rio Branco, Amazonas, Pará, Mato Grosso; PERÚ, Loreto.

SURINAME: Nickerie, Coeroeni Island, waterside, *P.* 1087, X.1959, 1 ♂, 4 ♀ apt. (S. Ligori, L).

Suriname, Republiek, Coropinakreek, *P.* 2173, 31.III.1963, 2 ♂, 1 ♀ apt. (P. H. van Doesburg jr., L).

BRASIL: Amazonas, Rio Solimões, 1 hour downstream Sta. Rita do Weil, *A.* 235, 25.VIII.1961, 1 ♀ apt.; same, Igarapé Amataura, *A.* 240, 27.VIII.1961, 2 ♂ macr.; Lower Rio Negro, R. Cuieiras, Igarapé da Arara, *A.* 410-1, 22.XI.1962, 1 ♂ macr. (E. J. Fittkau, A); Upper Rio Negro, R. Maupés, Igarapé in Taracua, *S.* 311, 1 ♂ apt.; Upper Rio Negro, in front of Icana, Mandi-Igarapé, *S.* 335, 18.XII.1959, 1 ♂, 3 ♀ apt. (H. Sioli, A); Mouth of Rio Negro, in front of Manaus, Lago de Catalão, *Si/Sa.* 8, 22. IX.1959, 1 ♂ macr. (W. Sattler & H. Sioli, A).

Pará, near Santarém, Cabeceira Verde, north of Lago Pauxis, *B.* 2, 28.VII.1947, 3 ♂, 1 ♀ macr.; same, Igarapé Grande do Jurucui, *B.* 11, 27.XI.1947, 1 ♂, 1 ♀ macr. (R. Braun, A); Rio Tapajós, Belterra, Lago da Maritima, *S.* 126, 29.V.1946, 1 ♂, 2 ♀ apt.; same, Pindobal, *S.* 136 18.VI.1946, 1 ♀ apt. (Sioli, A).

Mato Grosso, Source-region of Rio Xingu, Igarapé Garapú, *A.* 565-4, 24.VIII.1965, 1 ♂ macr. (Fittkau, A).

Apterous form:

Length, male 4.90-5.11-5.26, female 5.30-5.59-6.10; width of head, male 1.24-1.25-1.26, female 1.18-1.22-1.36; width across intermediate acetabula, male 1.50-1.55-1.61, female 1.68-1.77-2.00 mm.

Colour, dorsally, brownish-black with lead-grey markings. Vertex with a rather indistinct U-shaped, pronotum with a central oval yellowish patch. Silvery hairs on sides of head, dorsally on intermediate and posterior acetabula and laterally on abdominal tergites 3-6 with their corresponding connexival segments. The abdominal silvery pilosity is rather variable in extent.

Length of head, 0.50-0.83-0.95, width of vertex 0.50-0.53-0.58 mm. Length of antennal segments, male I = 0.93-1.02-1.06, II = 0.50-0.57-0.60, III = 0.51-0.53-0.56, IV = 0.58-0.62-0.65; female I = 0.98-1.03-1.10, II = 0.52-0.59-0.67, III = 0.55-0.59-0.61, IV = 0.62-0.67-0.72 mm. Length of pronotum, male 0.54-0.64-0.69, female 0.60-0.63-0.70; width of anterior femur, male 0.30, female 0.23-0.27-0.30; width of intermediate femur, male 0.11-0.12, female 0.12-0.13-0.15 mm. Anterior femur slightly sinuate, anterior tibia

curved. Length of abdomen caudal to posterior coxae, male 1.50–1.57–1.70, female 1.55–1.74–1.95; length of posterior femur, male 3.60–3.80–4.00, female 3.60–3.85–4.10 mm.

Macropterous form as apterous except:

Length, male 5.61–5.80–6.00, female 5.90–6.06–6.20; width of head, male 1.26–1.28–1.30, female 1.24–1.28–1.30; humeral width of pronotum, male 1.26–1.29–1.31, female 1.30–1.33–1.38; width across intermediate acetabula, male 1.65–1.70–1.78, female 1.80–1.82–1.85; length of pronotum, male 2.05–2.11–2.15, female 2.20–2.27–2.40 mm.

Hemelytra dark brownish, veins blackish.

Eurygerris fuscinervis (Berg, 1898)

Brachymetra fuscinervis BERG, 1898, p. 3 (Argentina).

Gerris fuscinervis; DRAKE & HARRIS 1934, p. 198–199 (Ecuador, Bolivia, Argentina).

Gerris fuscinervis; KUITERT 1942, p. 124 (Bolivia, Argentina).

Gerris fuscinervis var. *invertis*; KUITERT, 1942, p. 124 (Perú).

Eurygerris fuscinervis; HUNGERFORD & MATSUDA 1958, p. 168.

PERÚ, La Libertad, Huánuco; ECUADOR; BOLIVIA, Cochabamba; ARGENTINA, Córdoba.

PERÚ: Huánuco, 1934, 8 ♂, 4 ♀ apt., 1 ♀ macr., some nymphs (J. de Voogd, L.).

The specimens were all badly damaged; none possessing a third or fourth antennal segment, it was impossible to verify if they belong to the var. *invertis* Kuitert which seems to be the common form in Perú.

Tachygerris adamsoni Drake, 1942

Tenagogonus adamsoni DRAKE, 1942. (n.v.).

Tenagogonus duolineatus KUITERT, 1942, p. 133–134 (Perú, Bolivia, Paraguay).

Tachygerris adamsoni; DRAKE 1957b, p. 193.

SURINAME!, Nickerie, Suriname; BRASIL, Amazonas, Pará, Mato

Grosso; PERÚ, Huánuco, La Libertad; BOLIVIA, Beni; PARAGUAY, Guairá.

SURINAME: Nickerie, Sipaliwini, 11.VI.1963, 6 ♂, 5 ♀ (P. H. van Doesburg jr., L).

Suriname, Kabel, on brook, *P. 137*, 20.X.1958, 5 ♂, 6 ♀; Medical Post Maripaheuvel at Sarakreek, *P. 352*, 24.X.1959, 2 ♂, 3 ♀; Republiek, 17.VII.1960, 1 ♀ (van Doesburg, L); Road to Afobakka, Km 67, on forest pool, 14.IX.1963, 2 ♂, 1 ♀ (D. C. Geijskes, L).

BRASIL: Amazonas, Upper Rio Negro, Rio Marauia, Cachoeira Bicho Mirim, *A. 448-1*, 31.XII.1962, 3 ♂; same, Missão S. Antonio, Caatinga, *A. 474*, 10.I.1963, 4 ♂, 1 ♀ (E. J. Fittkau, A).

Pará, Upper Rio Parú do Oeste, pool, *Sa. 846*, 29.I.1961, 3 ♂ (W. Sattler). Mato Grosso, Serra Roncador, Iguarapé near Acampamento, Km 80, *A. 558-1*, 16.VIII.1965, 1 ♀ (Fittkau, A).

Length, male 6.70–6.80–7.00, female, 7.50–7.62–7.80; width of head, male 1.31–1.36–1.40, female 1.42–1.48–1.50; humeral width of pronotum, male 1.28–1.32–1.38, female 1.50–1.52–1.56; width across intermediate acetabula, male 1.72–1.77–1.90, female 2.12–2.22–2.30 mm.

Colour, dorsally reddish brown, hemielytra dark brown. Vertex with a median v-shaped and short latero-posterior, pronotum with short antero-median and antero-lateral longitudinal blackish stripes.

Length of head 0.75–0.83–0.90; posterior width of vertex 0.60–0.66–0.73; median length of pronotum anterior to humeral angles, male 1.36–1.47–1.52, female 1.60–1.65–1.75; length of posterior part of pronotum, male 1.00–1.06–1.11, female 1.10–1.23–1.35 mm. Length of antennal segments, male I = 1.10–1.12–1.16, II = 0.80–0.83–0.87, III = 1.30–1.40–1.48, IV = 1.80–2.10–2.20; female I = 1.22–1.30–1.40, II = 0.88–0.91–1.00, III = 1.32–1.40–1.51, IV = 2.15–2.29–2.60 mm.

Male, apex of abdomen Fig. 144, female, posterior border of last abdominal sternite Fig. 145.

***Tachygerris opacus* (Champion, 1901)**

Limnometra opacus CHAMPION, 1901, p. 150 (Panamá).

Tenagonus opacus; DRAKE & HARRIS 1934, p. 217 (British Honduras, Guatemala, Nicaragua, Costa Rica, Panamá).

Tenagonus opacus; KUITERT 1942, p. 133 (Canal Zone, British Guiana, Ecuador).

BRITISH HONDURAS; GUATEMALA; NICARAGUA; COSTA RICA; PANAMÁ; Canal ZONE; VENEZUELA!, Aragua; GUYANA; BRASIL!, Amazonas; ECUADOR, Napo Pastaza.

VENEZUELA: Aragua, Maracay, 15.XI.1958, 6 ♂, 3 ♀ (P. H. van Doesburg jr., L).

BRASIL: Amazonas, Rio Marauia, Missão S. Antonio, Caatinga, A. 474, 10.I.1963, 1 ♀ (E. J. Fittkau, A).

***Tachygerris surinamensis* Hungerford & Matsuda, 1958**

Tachygerris surinamensis HUNGERFORD & MATSUDA, 1958, p. 114 (Suriname).

SURINAME: Suriname; BRASIL!, Amazonas, Pará.

SURINAME: Suriname, Kabel, brook, P. 137, 20.X.1958, 8 ♂, 8 ♀; Brownsberg, P. 195, 1.III.1959, 3 ♀; Maripaheuvel, Sarakreek, P. 352, 24.X.1959, 5 ♀ (P. H. van Doesburg jr., L); road to Afobakka, Km 67, pool in forest, 14.IX.1963, 1 ♀ (D. C. Geijskes, L).

BRASIL: Amazonas, near Manaus, Rio Cuieiras, Igarapé Agua Encarnada, A. 551-1, 27.VII.1965, 1 ♂ (E. J. Fittkau, A).

Pará, near Belém, Thomé-assú, S. 191, 25.XI.1964, 1 ♂; Rio Cupari, Igarapé florestal Prainha, S. 208, 25.XII.1947, 1 ♂ (H. Sioli, A).

Length, male 5.80-5.88-6.00, female 6.20-6.78-7.20; width of head, male 1.19-1.21-1.23, female 1.28-1.31-1.36; humeral width of pronotum, male 1.12-1.17-1.20, female 1.30-1.38-1.48; width across intermediate acetabula, male 1.60-1.63-1.70, female 1.88-2.06-2.20 mm.

Colour, dorsally, reddish brown, hemielytra dark brown. Pattern of dark stripes on head and pronotum very indistinct.

Length of head 0.70-0.81-0.90, posterior width of vertex 0.55-0.62-0.70; median length of pronotum anterior to humeral angles, male 1.28-1.31-1.40, female 1.45-1.51-1.60; median length of pronotum posterior to humeral angles, male 0.92-1.00-1.10, female 1.00-1.13-1.20 mm. Length of antennal segments, male I = 1.10-1.16-1.20, II = 0.84-0.91-1.00, III = 1.60-1.66-1.70, IV = 2.60-2.69-2.80; female I = 1.12-1.23-1.30, II = 0.82-0.89-0.98, III = 1.40-1.54-1.70, IV = 2.50-2.60-2.70 mm.

Male, apex of abdomen Fig. 146–147; female, posterior margin of last abdominal sternite tridentate in the middle Fig. 148.

Cylindrostethus hungerfordi Drake & Harris, 1934

Cylindrostethus hungerfordi DRAKE & HARRIS, 1934, p. 221 (British Guiana).

Cylindrostethus hungerfordi; KUITERT 1942, p. 136 (British Guiana).

GUYANA; SURINAME!, Suriname; BRASIL!, Pará.

SURINAME: Suriname, Sarakreek, small creek near Sara, *P.* 171, 23.X.1958, 10 ♂, 8 ♀, apt.; Brownsberg, *P.* 196, 1.III.1959, 1 ♀ apt., 1 ♀ macr. (P. H. van Doesburg jr., L); Brownsberg, 24.XI.1964, 1 ♂, 2 ♀ apt. (D. C. Geijskes, L).
BRASIL: Pará, Upper Rio Parú de Oeste, Igarapé Akahe, *A.* 354, 15.III.1962, 17 ♂, 17 ♀, apt.; same, Igarapé Iveraca 2, *A.* 376–1, 17.IV.1962, 3 ♂ apt. (E. J. Fittkau, A); Serra Tumucumaque, Igarapé Tauá, *Sa.* 837, 13.II.1961, 2 ♂, 1 ♀ apt.; same, Igarapé Merió, *Sa.* 839, 10.II.1961, 1 ♂, 1 ♀ apt.; same, Igarapé Kurápina, *Sa.* 867, 11.II.1961, 1 ♀ apt. (W. Sattler, A).

Apterous form:

Length, male 17.7–18.9–19.8, female 18.0–19.0–19.7; width of head, male 1.98–2.03–2.08, female 1.95–1.99–2.02; width across intermediate acetabula, male 2.70–2.79–2.90, female 2.62–2.79–2.90 mm.

Colour light brown, pronotum with lateral patches, mesonotum with lateral stripes, dorsum of abdomen except median line, antennae and parts of legs dark.

Length of antennal segments, male I = 2.09–2.16–2.23, II = 0.74–0.77–0.80, III = 0.61–0.64–0.70, IV = 1.00–1.08–1.15; female I = 2.15–2.20–2.23, II = 0.70–0.74–0.80, III = 0.61–0.65–0.70, IV = 1.05–1.08–1.11 mm.

Apex of abdomen, male Fig. 150, female Fig. 151.

Macropterous form as apterous except for the well developed pronotum with faint submedian darker stripes. Hemelytra dark brown.

***Cylindrostethus palmaris* Drake & Harris, 1934**

Cylindrostethus linearis; DRAKE & HARRIS (nec ERICHSON) 1930, p. 238–239 (Brasil).
Cylindrostethus palmaris DRAKE & HARRIS, 1934, p. 222 (Trinidad, British Guiana, Brasil).

Cylindrostethus palmaris; KUITERT 1942, p. 136–137 (British Guiana, Brasil, Bolivia).

Cylindrostethus palmaris; HYNES 1948, p. 346 (Trinidad).

Cylindrostethus palmaris; DE KORT-GOMMERS & NIESER, 1969, p. 79 (Trinidad).

COLOMBIA; VENEZUELA; TRINIDAD; GUYANA; SURINAME!, Nickerie, Saramacca, Suriname; BRASIL, Amazonas, Pará, Mato Grosso; BOLIVIA, Beni.

SURINAME: Nickerie, Káysergebergte, 2.X.–22.X.1960, 4 ♂, 9 ♀, apt (Sagiman, L); same, expedition H. A. Beatty (Chicago Nat. Hist. Mus.) 14.XII.1960–3.I.1961, 1 ♂, 2 ♀ macr. (Moentari, L); Sipaliwini, 31.I.1961, 1 ♀ apt. (D. C. Geijskes, L).

Saramacca, Coppename Rivier, Raleigh Falls, 16.VII.1963, 5 ♂, 3 ♀ apt., 1 ♀ macr. (P. H. van Doesburg jr., L).

Suriname, railroad Paramaribo-Kabel, Km 68, on rivulet, P. 63, 17.VIII.1958, 5 ♂, 2 ♀ macr.; Kabel, rivulet near Makambi, P. 167, 22.X.1958, 8 ♂, 7 ♀ apt.; Sarakreek, small creek at Sara, P. 171, 23.X.1958, 1 ♂ macr.; Medical Post Maripaheuvel at Sarakreek, P. 352, 24.X.1959, 4 ♂, 3 ♀ apt.; Gansee, 20.X.1959, 2 ♂, 2 ♀ apt.; road to Hannover, near Zanderij, creek in savanna woods, P. 814, 23.IX.1960, 5 ♂, 1 ♀ apt., 2 ♂, 1 ♀ macr.; Zanderij, Carolinakreek, 10.XII.1961, 3 ♂, 3 ♀ apt., 2 ♂ macr.; same, P. 1186, 24.IV.1962, 1 ♂ apt.; same, P. 2013, 29.VIII.1962, 2 ♂, 2 ♀ apt.; Mooi Wana, 28.VII.1963, 1 ♀ apt. (van Doesburg, L); Sarakreek, 15.XII.1963, 1 ♂, 1 ♀ apt.; Kabel, Reukreek, 18.XI.1964, 1 ♂ macr. (Geijskes, L); Carolinakreek, P. 2116, 18.XI.1962, 1 ♂, 1 ♀ apt. (B. Malkin, L).

BRASIL: Amazonas, Manaus, São Antonio, Igarapé do Bajaon, A. 276, 11.XII.1961, 2 ♂, 1 ♀ apt.; same, A. 279–2, 11.XII.1961, 1 ♀ apt.; Rio Negro, upstream R. Branco, Igarapé Aduja, A. 343, 10.II.1962, 2 ♂ apt.; Upper Rio Negro, R. Marauia, Igarapé S. Antonio, A. 467, 3 ♂ apt. (E. J. Fittkau, A).

Pará, near Belém, Igarapé near Bemfica, A. 2–3, 20.VIII.1960, 2 ♂, 1 ♀ apt., 1 ♀ macr. (Fittkau, A); same, Sa. 833, 23.VIII.1960, 1 ♀ apt.; same, Sa. 873, 13.XII.1960, 6 ♂, 3 ♀ apt., 1 ♀ macr.; Serra de Tumucumaque, Igarapé Kurápina, Sa. 867, 1 ♀ macr.; Rio Paru de Oeste, Sa. 834, 27.I.1961, 5 ♂, 4 ♀ apt.; same, Igarapé Komadevéni, Sa. 878, 25.I.1961, 7 ♂, 3 ♀ apt., 1 ♀ macr.; same, Titiyó-Maloca, Sa. 891, 19 ♂, 14 ♀ apt.; same, Igarapé Akahé, Sa. 892, 8.I.1961, 1 ♀ apt. (W. Sattler, A); Belém, Igarapé Agua Branca, S. 183, 18.XI.1946, 2 ♀ apt.; Oriximina, Lago Salgado, Igarapé S. Benedito, S. 223, 15.IV.1948, 1 ♀ apt.; Alenquer, S. 234–b, 3 ♂ macr. (H. Sioli, A).

Mato Grosso, Serra Roncador, Igarapé near Acampamento, Km 80, A. 558–1, 16.VIII.1965, 5 ♂ macr.; same, A. 558–2, 1 ♂, 1 ♀ macr.; same,

Igarapé at Km 125, A. 559, 17.VIII.1965, 1 ♂ apt., 6 ♂, 6 ♀ macr. (Fittkau, A)

Apterous form:

Length, male 16.8-17.4-18.6, female 18.7-19.2-19.5; width of head, male 1.80-1.81-1.85, female, 1.78-1.83-1.86; width across intermediate acetabula, male 2.35-2.41-2.50, female 2.52-2.61-2.70 mm.

Colour yellowish brown, pronotum and mesonotum with distinct dark lateral stripes, dorsum of abdomen, parts of legs and antennae dark.

Length of antennal segments, male I = 2.11-2.16-2.21, II = 0.83-0.88-0.91, III = 0.60-0.61-0.63, IV = 1.01-1.04-1.08; female I = 2.30-2.37-2.45, II = 0.92-0.97-1.00, III = 0.65-0.70-0.80, IV = 1.00-1.06-1.11 mm.

Apex of abdomen, male Fig. 152, female Fig. 153.

Macropterous form as apterous except for the better developed pronotum which is dark brown to black with a large yellowish patch on anterior lobe and margins broadly yellow. Hemelytra dark brown to black.

***Cylindrostethus erythropus* (Herrich-Schäffer, 1853)**

Hydrometra erythropus HERRICH-SCHÄFFER, 1853, p. 68-69, fig. 9-23 (Brasil).

Cylindrostethus erythropus; DRAKE & HARRIS 1934, p. 219-220 (Brasil).

Cylindrostethus erythropus; KUITERT 1942, p. 136 (Brasil).

Cylindrostethus erythropus; ROBACK; 1966, p.212 (Perú).

BRASIL, Amazonas, Pará!; PERÚ, Loreto.

BRASIL: Amazonas, Rio Solimões, downstream B. Constant. A. 230, 10. VIII.1961, 1 ♂, 3 ♀; Rio Solimões, R. Tocantins, Villa Nova, A. 244, 29/30. VIII.1961, 4 ♂ (E. J. Fittkau, A); São Antonio do Içá, Igarapé do Jonato, S. 320, 12.X.1959, 1 ♀; same, Amataurá, Igarapé Tocano near Maturá, S. 322, 17.X.1959, 1 ♀ (H. Sioli, A).

Pará, Belém, Nova Olinda, 3.IX.1960, 1 ♀ (Fittkau, A). All apterous.

Apterous form:

Length, male 13.9-14.5-15.0, female 15.2-16.2-17.6; width of head, male 1.50-1.51-1.53, female 1.54-1.58-1.60; width across

intermediate acetabula, male 2.00–2.04–2.08, female 2.15–2.20–2.28 mm.

Colour, greyish, connexivum and legs yellowish brown.

Length of antennal segments, male I = 1.80–1.91–2.01, II = 0.73–0.79–0.82, III = 0.52–0.58–0.61, IV = 1.01–1.04–1.07; female I = 1.91–1.93–2.00, II = 0.75–0.79–0.80, III = 0.51–0.54–0.58, IV = 0.98–1.03–1.09 mm.

Male, fifth and sixth abdominal sternite with a distinct median impression, without central longitudinal carina. Hind margin of sixth sternite doubly emarginate, apex of abdomen Fig. 154.

Female, hind margin of sixth abdominal sternite medially bluntly but distinctly projecting, Fig. 155.

Cylindrostethus linearis (Erichson, 1848)

Hydrobates linearis ERICHSON, 1848, p. 614 (British Guiana).

Cylindrostethus linearis; DRAKE & HARRIS 1934, p. 220–221 (British Guiana, Brasil).

Cylindrostethus linearis; KUITERT 1942, p. 136 (Brasil).

GUYANA; BRASIL, Amazonas, Pará!

BRASIL: Amazonas, Central Rio Negro, upstream R. Branco, Igarapé Aduja, A. 342, 10.II.1962, 15 ♂, 13 ♀ (E. J. Fittkau, A); Upper Rio Negro, mouth of R. Maupés, Caatinga do Ticundari in front of Icana, S. 334, 17.XII.1959, 4 ♂, 1 ♀ (H. Sioli, A).

Pará, Rio Branco de Obidos, S. 196, 18.VII.1947, 2 ♂, 4 ♀; Rio Cupari, R. Pixuna, S. 202, 21.XII.1947, 1 ♂, 2 ♀; Rio Tapajós, R. Arapiuns, R. Maró, S. 258, 2.VI.1952, 2 ♀ (Sioli, A). All apterous.

Apterous form:

Length, male 12.8–14.6–16.2, female 15.4–15.9–16.3; width of head, male 1.40–1.49–1.52, female 1.51–1.55–1.60; width across intermediate acetabula, male 1.90–2.04–2.14, female 2.20–2.27–2.35 mm.

Colour, brown and grey.

Length of antennal segments, male I = 1.58–1.89–2.08, II = 0.70–0.74–0.80, III = 0.49–0.53–0.58; IV = 0.98–1.05–1.10; female I = 1.90–1.98–2.08, II = 0.72–0.74–0.80, III = 0.50–0.52–0.53, IV = 0.95–1.06–1.12 mm.

Male, sixth abdominal sternite basally with a median depression divided by a central longitudinal carina. Hind margin of sixth sternite doubly emarginate, apex of abdomen Fig. 157.

Female, hind margin of sixth sternite less strongly produced than in *C. erythropus*, Fig. 158.

***Brachymetra albinervis* (Amyot & Serville, 1843)**

Halobates albinervis AMYOT & SERVILLE, 1843, p. 412.

Brachymetra albinerva; SHAW 1933, p. 228–229 (Canal Zone, Trinidad, Brasil, Ecuador).

Brachymetra albinerva; ROBACK 1966, p. 213 (Perú).

Brachymetra albinervis; DE KORT-GOMMERS & NIESER 1969, p. 79–80 (Lesser Antilles).

PANAMÁ; CANAL ZONE; TRINIDAD; SURINAME!, Suriname, Marowijne; BRASIL, Pará, Amazonas, Mato Grosso!, São Paulo; ECUADOR; PERÚ, Loreto; PARAGUAY, Guairá. – LESSER ANTILLES.

SURINAME: Suriname, Medical Post Maripaheuvel, near Sarakreek, *P.* 352, 24.X.1959, 2 ♂ macr., 1 ♀ apt. (P. H. v. Doesburg jr., L); Waremapan, beneden kamp, 31.VII.1939, 1 ♂ apt., 1 ♀ macr. (D. C. Geijskes, L); Beek op Jan-basi-gado, 7.I.1903, 2 ♂, 4 ♀ macr. (L).

BRASIL: Amazonas, Upper Rio Negro, R. Marauia, *A.* 494–2, 24.I.1963, 1 ♂ apt. (E. J. Fittkau, A); Upper Rio Negro, Jararaca-Igarapé, *S.* 262, 16.IX.1952, 1 ♂ apt. (H. Sioli, A).

Pará, Rio Paru, Missão Tiriyo, *A.* 360, 22.III.1962, 3 ♀ apt. (Fittkau, A); Serra de Tumucumaque, Igarapé Tauá, *Sa.* 837, 13.II.1961, 1 ♀ macr.; same, Igarapé Tamiring, *Sa.* 860, 9.II.1961, 1 ♀ apt. (W. Sattler, A); upstream Oriximina, Lago Salgado, Igarapé Salgadinho, *S.* 222, 12.IV.1948, 1 ♀ apt.; same, Igarapé S. Benedito, *S.* 223, 15.IV.1948, 1 ♀ apt. (Sioli, A).

Mato Grosso, Serra Roncador, near Acampamento, Igarapé at Km 125, *A.* 559, 17.VIII.1965, 1 ♂, 1 ♀ apt., 2 ♂, 3 ♀ macr. (Fittkau, A).

São Paulo, Igarapé near S. Sebastian, *A.* 274, 7.XI.1961, 1 ♂, 1 ♀ apt. (Fittkau, A).

***Brachymetra lata* Shaw, 1933**

Brachymetra lata SHAW, 1933, p. 227–228 (Brasil).

SURINAME!, Suriname, Marowijne; BRASIL, Pará!, Amazonas.

SURINAME: Suriname, Kabel, on brook, *P.* 138, 20.X.1958, 5 ♂, 6 ♀ apt., 1 ♂, 3 ♀ macr.; brook near Sara, *P.* 171, 23.X.1958, 7 ♂, 7 ♀ apt., 3 ♀ macr.;

Brownsberg, *P. 194*, 1.III.1959, 2 ♂ apt., 1 ♀ macr.; Medical Post Maripauheuvel at Sarakreek, *P. 352*, 24.X.1959, 3 ♀ macr.; Zanderij, 23.IX.1960, 8 ♂, 7 ♀ apt.; same, road to Hannover, rivulet in savanna woods, *P. 814*, 9 ♂, 6 ♀ apt.; Carolina-kreek, *P. 1168*, 8.IV.1962, 1 ♂, 1 ♀ apt.; same, 29.VIII.1962, 1 ♂, 1 ♀ apt., 1 ♂, 1 ♀ macr. (P. H. van Doesburg jr., L.); Carolina-kreek, 10.XII.1961, 2 ♂, 1 ♀ apt.; Brownsweeg, 24.XI.1964, 1 ♀ macr. (D. C. Geijskes, L.); Beek op Jan-basi-gado, 7.I.1903, 1 ♂, 1 ♀ macr. (L.).

Marowijne, Nassaugebergte, Suriname Expeditie 1948/49, line Km 0.2, brook, 16.II.1949, 4 ♂, 2 ♀ apt.; same, Km 11.2, rivulet, 15.III.1949, 1 ♂, 1 ♀ apt. (Geijskes, L.).

BRASIL: Amazonas, Manaus, Igarapé Castanha, *A. 000*, 22.X.1965, 1 ♂ apt.; Lower Rio Negro, Ponta negra, Igarapé da Bica, *A. 185*, 23.VI.1961, 2 ♂ apt.; near Manaus, S. Antonio, Igarapé do Bajaon, *A. 279-2*, 11.XII.1961, 1 ♀ macr.; Lower Rio Negro, Reserva Duke, Igarapé Barro branco, *A. 400*, 30.VII.1962, 1 ♂, 1 ♀ apt.; Upper Rio Negro, R. Marauia, Missão near Cachoeira S. Antonio, *A. 465*, 7.I.1963, 1 ♀ apt.; same, Caatinga, *A. 478*, 11.I.1963, 1 ♂ apt.; Rio Marauia, *A. 500*, 26.I.1963, 1 ♂ apt. (E. J. Fittkau, A.); Upper Rio Negro, Jandiá-Igarapé, *S. 265*, 19.IX.1952, 1 ♀ apt.; near Manaus, Igarapé da Cambraia, *S. 305-a*, 26.X.1956, 1 ♀ apt. (H. Sioli, A.). Pará, Belém, Igarapé near Bemfica, *A. 2-3*, 20.VIII.1960, 1 ♂ apt.; Upper Rio Paru de Oeste, Igarapé Akahe, *A. 354*, 15.III.1962, 1 ♀ apt.; same, Igarapé Iveraca 2, *A. 376-1*, 17.IV.1962, 1 ♂ apt.; near Manaus, Rio Cuieiras, Igarapé Agua Encarnada, *A. 551-1*, 27.VII.1965, 4 ♂, 6 ♀ apt. (Fittkau, A.); Belém, Igarapé near Bemfica, *Sa. 833*, 23.VIII.1960, 1 ♂ apt.; road Belém-Brasília, brook at Km 30 from S. Miguel, *Sa. 836*, 2.IX.1959, 3 ♂ apt.; Serra de Tumucumaque, Igarapé Tauá, *Sa. 837*, 13.II.1961, 2 ♂, 3 ♀ apt.; Igarapé near Bemfica, *Sa. 843*, 4.V.1961, 1 ♂ apt.; same, *Sa. 873*, 13.XII.1960, 4 ♂, 10 ♀ apt., 1 ♂ macr. (W. Sattler, A.); Belém, Igarapé Boa Vista, *S. 179*, 15.XI.1946, 1 ♂, 1 ♀ apt.; Zona Bragantina, Igarapé near Curucá, *S. 291*, 13.VIII.1953, 1 ♂ apt. (Sioli, A.).

Apterous form:

Length, male 6.20–6.43–6.60, female 6.05–6.46–6.75; greatest width of head, male 1.68–1.73–1.78, female 1.67–1.76–1.80 mm.

Colour dorsally reddish brown, lateral margins of vertex along eyes, margin of pronotum, margin of connexivum, apex of last abdominal tergite, genital segments, apex of posterior acetabula, subapical patch on intermediate acetabula, antennae and legs dark brown. The brown design is more distinct in males than in females. Acetabula without patches of silvery hairs, intermediate femur of male with a subapical stripe of silvery hairs on inner surface.

Median length of head 0.72–0.79–0.82, posterior width of vertex 0.60–0.64–0.72, length of posterior margin of an eye 0.69–0.71–0.79 mm. Length of antennal segments, male I = 1.45–1.53–1.61, II =

0.78–0.82–0.90, III = 1.10–1.22–1.30, IV = 0.81–0.88–0.92; female I = 1.33–1.40–1.50, II = 0.68–0.71–0.75, III = 1.10–1.16–1.20, IV = 0.80–0.88–0.91 mm. Posterior edges of eyes distinctly caudal of posterior margin of vertex (Fig. 161). Median length of pronotum 2.40–2.52–2.60 mm. Posterior margin of mesonotum often entirely visible. Hind margin of metanotum and first abdominal tergite distinctly sinuate. Greatest width of anterior femur 0.27–0.30–0.33, greatest width of intermediate femur 0.21–0.23–0.26 mm. Anterior femur with many short pegs and several long hairs on posterior (under) surface.

Macropterous form as apterous except:

Length, male 6.36–6.61–6.90, female 6.60–6.69–6.72; humeral width of pronotum, male 1.78–1.83–1.92, female 1.89–1.91–1.92 mm.

Colour, hemielytra with costal margin reddish brown, remainder dark brown with yellowish veins.

Median length of pronotum 2.55–2.68–2.72 mm, apex of pronotum broadly rounded. Hemielytra surpassing the apex of abdomen with 0.3–0.4 mm in males and not or hardly in females.

This species is recognised at once by the backward pointing eyes in combination with the dense field of small pegs on the posterior surface of the relatively thin anterior femur.

***Brachymetra unca* Shaw, 1933**

Brachymetra unca SHAW, 1933, p. 222–223 (Trinidad).

TRINIDAD: Mount St. Benedict, 20.VII.1929, 6 ♂, 3 ♀ apt., 1 ♂, 2 ♀ macr. (D. C. Geijskes, L).

Apterous form:

Length, male 6.31–6.64–6.90, female 6.50–6.70–6.80; width of head across eyes, male 1.45–1.49–1.50, female 1.40–1.45–1.49 mm.

Colour dorsally reddish brown, lateral margins and median line on pronotum, margins of connexivum, genital segment, antennae and legs dark. Middle and posterior acetabula dorsally with distinct spots of silvery hairs. No stripe of silvery hairs on the inner surface of the intermediate femur of male.

Median length of head 0.79–0.82–0.88; length of antennal segments male I = 1.68–1.73–1.82, II = 0.61–0.64–0.67, III = 1.01–1.02–1.04, IV = 0.78–0.80–0.83; female I = 1.40–1.46–1.58, II = 0.55–0.58–0.60, III = 0.91–0.96–1.00, IV = 0.80–0.82–0.85; posterior width of vertex 0.67–0.70–0.72; posterior margin of an eye 0.50–0.55–0.65 mm. Posterior edges of the eyes reaching only slightly caudal of the posterior margin of vertex. Length of pronotum, male 2.40–2.45–2.50, female 2.30–2.37–2.40; width of anterior femur, male 0.39–0.42–0.44, female 0.34–0.36–0.39; width of intermediate femur, male 0.25–0.27–0.31, female 0.24–0.25–0.25 mm.

Male genital segments long, parameres very long, reaching each other over the second genital segment (Fig. 159).

Macropterous form as apterous except:

Length, male 7.00, female 6.80–6.90; width of head, male 1.49, female 1.42–1.43 mm.

Hemelytra dark brown to blackish, veins indistinct.

Humeral width of pronotum, male 2.10, female 2.01–2.10; median length of pronotum, male 3.20, female 3.00–3.18 mm.

This species is, apart from the male genital characteristics, easily separated from other *Brachymetra*-species by the longitudinal dark line on the pronotum.

***Brachymetra shawi* Hungerford & Matsuda, 1957**

Brachymetra kleopatra; SHAW (nec KIRKALDY) 1933, p. 226 (British Guiana).

Brachymetra shawi HUNGERFORD & MATSUDA, 1957, p. 22–24 (British Guiana, Suriname, French Guiana, Brasil, Bolivia).

GUYANA; SURINAME, Nickerie, Saramacca, Suriname; GUYANE FRANÇAISE; BRASIL, Pará, Amazonas; BOLIVIA, Beni.

SURINAME: Nickerie, Sipaliwini, 11.VI.1963, 1 ♀ macr. (P. H. van Doesburg jr., L).

Saramacca, Tafelberg, near airstrip, II.1961, 2 ♂, 6 ♀ macr. (D. C. Geijskes, L).

Suriname, Medical Post Maripaheuvel at Sarakreek, P. 352, 24.X.1959, 5 ♂, 7 ♀ macr. (van Doesburg, L); road to Afobakka, Km 67, on pool in forest,

14.IX.1963, 1 ♂, 1 ♀ macr. (Geijskes, L); Guyanagoudplacer, X.1911, 1 ♂, 5 ♀ macr. (W. C. van Heurn, L).

BRASIL: Amazonas, near Manaus, Reserva Duke, Igarapé Barro Branco, A. 117, 2.III.1961, 1 ♀ macr.; Upper Rio Negro, R. Marauia, Missão S. Antonio, Caatinga, A. 474, 10.I.1963, 2 ♀ macr.; near Manaus, Rio Cuieiras, Igarapé Agua Encarnada, A. 551-1, 27.VII.1965, 7 ♂, 6 ♀ macr. (E. J. Fittkau, A).

Pará, upstream Oriximina, Lago Salgado, Igarapé da Agua doce, S. 225, 23.IV.1948, 2 ♀ macr.; near Alenquer, Paraná de Alenquer, Fonte perto at Km 15, S. 237, 24.VIII.1949, 1 ♂, 4 ♀ macr. (H. Sioli, A).

Macropterous form:

Length, male 7.40-7.69-7.90, female 7.80-7.94-8.10; greatest width of head, male 1.78-1.79-1.80, female 1.77-1.79-1.82; humeral width of pronotum, male 2.18-2.25-2.29, female 2.20-2.29-2.42 mm.

Colour dorsally light reddish brown, antennae, legs and apices of acetabula darker brown. Hemielytra reddish brown, distinctly darker than pronotum, with distinct yellowish veins. Intermediate and posterior acetabula with patches of silvery hairs dorsally at apex.

Median length of head, male 0.91-0.96-1.00, female 0.83-0.88-0.95; posterior width of vertex, 0.81-0.82-0.85; length of posterior margin of an eye 0.61-0.66-0.75 mm. Length of antennal segments, male I = 1.62-1.66-1.70, II = 0.79-0.81-0.83, III = 1.06-1.11-1.16, IV = 0.95-0.96-0.97; female I = 1.49-1.56-1.60, II = 0.76-0.80-0.82, III = 1.05-1.07-1.11, IV = 0.90-0.91-0.92 mm. Posterior edges of eyes reaching slightly caudal of the posterior margin of vertex. Median length of pronotum anterior to humeral angles 1.48-1.53-1.60, median length of pronotum posterior to humeral angles 2.13-2.39-2.60; width of anterior femur, male 0.46-0.48-0.49, female 0.44-0.47-0.48; width of intermediate femur, male 0.23-0.24-0.26, female 0.22-0.23-0.25 mm. Apex of pronotum acutely rounded. Intermediate tibia of male without stripe of silvery hairs on inner surface. Male, genital clasper Fig. 162.

***Rheumatobates crassifemur esakii* Schroeder, 1931**

Rheumatobates crassifemur esakii SCHROEDER, 1931, p. 77-78 (Brasil).

Rheumatobates crassifemur esakii; HUNGERFORD 1954, p. 565-566 (British Guiana, Brasil).

GUYANA; SURINAME!, Suriname, Commewijne; BRASIL, Pará, Amazonas.

SURINAME: Suriname, road to Zanderij, Km 34, on ditch, *P. 2172*, 31.III.1963, 5 ♂, 9 ♀, many nymphs, apt.; Paramaribo, Charlesburg, *P. 2189*, 29.IV.1963, 3 ♂, 6 ♀, 45 nymphs apt.; same 30.IV.1963, 4 ♂, 4 ♀ apt. (P. H. van Doesburg jr., L).

Commewijne, Plantation Leliendaal, on ditch, *P. 2153*, 17.III.1963, 3 ♂, 8 ♀ apt.; same, *P. 2178*, 14.IV.1963, 11 ♂, 14 ♀, 24 nymphs apt., 2 ♀ (teneral) macr. (van Doesburg, L).

BRASIL: Amazonas, Lago Redondo, 4.I.1964, 1 ♂ macr. (G. Marlier, B. I. G. 23.156); S. Antonio 21, 1 ♂, 2 ♀ macr. (C. Ribeiro, A).

Apterous form:

Length, male 2.20–2.29–2.40, female 2.64–2.73–2.80; width of head, male 0.81–0.83–0.85 mm.

Colour, male, black with a lead grey tinge. First antennal segment yellow, remainder of antennae shining brown. Vertex with brown patches along eyes. Anterior legs, basal 2/3 of femur yellow, remainder brown to black. Intermediate and posterior legs brown to black except basal parts of trochanters which are yellow to a varying extent. Pronotum with a median yellow patch. Genital segments and apical part of connexivum yellowish, sometimes pruinose whitish. Female coloured as male except connexivum, which often has only the last segment yellowish and the genital segments, which are black or the first yellowish to a varying extent.

Width across intermediate acetabula, male 1.22–1.26–1.36, female 1.12–1.19–1.26 mm.

Male antenna Fig. 163, basal segment distinctly swollen, apical segment with a tuft of about five long stout hairs (characteristic of subspecies). Intermediate femur with 12–20 short bristles along basal 2/3 of inner margin. Hind legs, Fig. 164, connection between trochanter and femur subbasally on femur, which lacks a basal tuft of anteriorly directed hairs. Trochanter with a thick tuft of stout hairs.

Female, length of antennal segments I = 0.23, II = 0.09–0.10, III = 0.25–0.28, IV = 0.41–0.46 mm. Length of segments of intermediate leg, coxa = 0.26–0.27, trochanter = 0.23–0.27, femur = 1.77–1.85, tibia = 1.85–1.95, tars I = 0.97–0.83, tars II = 0.29–0.37 mm.

Macropterous form as apterous except:

Length, male 2.42–2.50, female 2.80–2.88–2.98; humeral width of pronotum, male 0.90–0.91, female 0.89–0.90–0.91 mm.

Hemelytra brownish with a narrow, whitish, oblique stripe near inner margin, veins dark. Pronotum brownish black with loose golden pubescence.

Length of pronotum, male 0.85–0.90, female 0.82–0.84–0.89 mm.

***Rheumatobates crassifemur schroederi* Hungerford, 1954**

Rheumatobates crassifemur schroederi HUNGERFORD, 1954, p. 566–567 (Brasil).

BRASIL: Amazonas!, Pará!, Ceará, Rio Grande do Norte, Pernambuco, Mato Grosso!, Goiás!.

BRASIL: Amazonas, middle course of Rio Negro, 30 Km downstream Bracelos, *A.* 333, 7.II.1962, 1 ♂, 1 ♀ apt. (E. J. Fittkau, A).

Pará, Rio Cupari, *S.* 162, 29.VII.1946, 1 ♂ apt; Rio Tapajós, Jacaré in front of Aveiro, *S.* 251-c, 21.IX.1950, 1 ♂, 5 ♀ apt., 1 ♀ macr. (H. Sioli, A).

Mato Grosso, Source-region of Rio Xingu, Rio Totoari, *A.* 573–5, 1.IX.1965, 1 ♂ macr.; same, Lago do Indio Morte, 15.IX.1965, 98 ♂, 37 ♀, 38 nymphs apt. (Fittkau, A).

Goiás, near Brasília, Formosa, Lagoa feia, *A.* 575, 3.X.1965, 1 ♂, 6 ♀, many nymphs apt. (Fittkau, A).

Essentially as *R. crassifemur esakii*. Apterous form:

Length, male 2.10–2.20–2.30, female 2.59–2.70–2.80; width of head, male 0.73–0.73–0.75, female 0.68–0.70–0.70; width across intermediate acetabula, male 1.04–1.06–1.09, female 1.09–1.14–1.20 mm.

Male last antennal segment (Fig. 165) with rather regularly spaced bristles, no tuft as in *R.c. esakii*.

Female, length of antennal segments I = 0.23–0.25–0.27, II = 0.11–0.11, III = 0.23–0.25–0.27, IV = 0.38–0.40–0.42 mm.

Macropterous form, notes referring to the only female studied.

Length 2.70, width of head across eyes 0.74, humeral width of pronotum 0.81, width across intermediate acetabula 1.10 mm. Hemelytra surpassing the apex of abdomen with 0.55 mm.

Rheumatobates klagei Schroeder, 1931

Rheumatobates klagei SCHROEDER, 1931, p. 75-77 (Brasil).

Rheumatobates klagei; HUNGERFORD 1954, p. 563-564 (Brasil).

Rheumatobates klagei; ROBACK 1966, p. 212 (Peru).

BRASIL: Pará, Amazonas; PERÚ, Loreto.

BRASIL: Amazonas, Manacapurú, Lago Calado, S. 329, 2.XII.1959, 11 ♂, 9 ♀ apt. (H. Sioli, A); Lago Maica, 62, 17.VIII.1963, 1 ♂, 8 ♀ apt. (G. Marlier, B, I.G. 23.156).

Apterous form:

Length, male 2.33-2.41-2.48, female 2.71-2.81-2.90; width of head, male 0.70-0.72-0.74, female 0.70-0.75-0.80 mm.

Colour brown to black, head posteriorly with a fulvous brown U-shaped band. First antennal segment, central patch on pronotum, basal parts of legs and often genital segments yellow. Meso- and metanotum often frosty.

Width across intermediate acetabula, male 1.12-1.16-1.20, female 1.21-1.26-1.30 mm.

Male antenna (Fig. 166), basal segment swollen, second and third segment of about equal length. Hindleg of male (Fig. 167), connection between trochanter and femur subbasally on femur, which has a rostrally directed tuft of hairs on its distal apex; trochanter with a slender medially directed tuft.

Female, length of antennal segments I = 0.29-0.31-0.33, II = 0.08-0.10-0.12, III = 0.26-0.27-0.27, IV = 0.39-0.42-0.46 mm.

Rheumatobates trinitatis (China, 1943)

Hynesia trinitatis CHINA, 1943, p. 72-77 (Trinidad).

Hynesia trinitatis; HYNES 1948, p. 348 (Trinidad).

Rheumatobates trinitatis; HUNGERFORD 1954, p. 536-537 (Trinidad).

GUADELOUPE; TRINIDAD; SURINAME!, Commewijne.

SURINAME: Commewijne, Plantation Alliance, under jetty, P. 2054, 5.XI.1962, 4 ♂ apterous (P. H. van Doesburg jr., L).

The male can be recognised on the structure of the fore leg Fig. 169. This species will be discussed more fully in a forthcoming paper.

Halobatopsis platensis (Berg, 1879)

Halobates platensis BERG, 1879, p. 183-184 (Argentina).

Halobatopsis platensis; ESAKI, 1926, p. 138 (Argentina).

Halobatopsis platensis; DRAKE & HARRIS 1941, p. 237 (Brasil).

BRASIL, Mato Grosso!, Goiás!, Minas Geraes, Rio Grande do Sul!;
ARGENTINA, Entre Rios, Buenos Aires.

BRASIL: Mato Grosso, Serra Roncador, Igarapé near Acampamento, Km 125, A. 559, 17.VIII.1965, 2 ♀ apt., 1 ♂ macr.; running water between Goiania and Cuiaba, A. 577-1, 8.X.1965, 1 ♀ apt. (E. J. Fittkau, A).
Goiás, Lagoa Bonita near Brasília, 576-1, 1 ♀ macr. (Fittkau, A).
Rio Grande do Sul, AR. D. Pedro, 8.XII.1960, 1 ♀ apt. (C. Ribeiro, A).

Apterous form:

Length, female 3.78-3.87-4.02; width of head, female 1.01-1.04-1.08; width across intermediate acetabula 2.02-2.14-2.21 mm.

Colour, head ochraceous with a central and a pair of latero-posterior black patches, pronotum dark yellow with large antero-lateral black patches; mesonotum light reddish brown with margins broadly black and a median black stripe; metanotum and abdomen largely black, last two abdominal tergites ochraceous. Mesopleurae dorsally whitish with a bluish tinge. Antennae and legs for the greater part black. Remainder variegated ochraceous and black.

Length of antennal segments, female I = 0.73-0.81-0.90, II = 0.41-0.46-0.53, III = 0.51-0.60-0.69, IV = 0.70-0.73-0.80 mm.

Macropterous form essentially as apterous except:
Pronotum well developed, black with one antero-median and a pair of submedian patches posteriorly, yellow. Hemielytra dull brown to blackish.

Male without ventral spine on first genital segment.

Ovatametra obesa Kenaga, 1942

Ovatametra obesa KENAGA, 1942, p. 138-139, fig. 4 (Brasil, Amazonas).

BRASIL: Pará!, Amazonas.

BRASIL: Amazonas, Lago Rio Preto de Eva, 22.IV.1964, 1 ♂, 4 ♀ (Marlier, 224, B).

Pará, Oriximina, Lago Salgado, Cabeceira do Molha, B. 29, 21.IV.1948, 2 ♀ (R. Braun, A); Rio Cururú, Igarapé, S. 91, 7.IV.1942, 2 ♀; same, mission-station, S. 99, 12.V.1942, 1 ♀; Belém, Thomé-assú, S. 115, 22.IV.1945, 1 ♂ (H. Sioli, A). All apterous.

Length, male 1.70–2.20, female 2.20–2.39–2.55; width across intermediate acetabula, male 0.80–0.85, female 1.20–1.28–1.38 mm.

Colour, variable, reddish yellow and black.

Length of antennal segments, male I = 0.42–0.50, II = 0.26–0.31 III = 0.26–0.33, IV = 0.51; female I = 0.43–0.49–0.52, II = 0.28–0.30–0.31, III = 0.30–0.32–0.36, IV = 0.46–0.48–0.50 mm.

Female with a small tuft of black hairs medially on posterior margin of last abdominal tergite.

This species is variable in colour, although specimens from the same population are rather uniform. KENAGA 1942, who had only one series of most of his species, thought the colour-pattern constant. *O. obesa* can have nearly the same pattern as *O. fusca* Kenaga. As the specimens studied in this publication differ from those of KENAGA and are not from the same locality, the present author has refrained from designating a male allotype.

Telmatometra fusca Kenaga, 1941

Telmatometra fusca KENAGA, 1941, p. 178–179 (Brasil, Amazonas).

SURINAME!, Suriname; BRASIL, Amazonas.

SURINAME: Suriname, La Rencontre, near Domburg, abandoned cocoa-plantation, on small pond, P. 38, 1 ♀ apt.; Kabel, on brook, P. 138, 20.X.1958, 2 ♂, 3 ♀ apt.; same. P. 139, 1 ♀ macr.; Mooi Wana, 28.VI.1963, 3 ♂, 4 ♀ apt. (P. H. van Doesburg jr., L); Sarakreek, Lemmetjekondre, on small pool near railroad, 17.XII.1962, 1 ♀ macr. (D. C. Geijskes, L).

Apterous form:

Length, male 3.20–3.30–3.50, female 3.91–4.02–4.10; width of head, male 0.90–0.93–0.98, female 0.97–0.99–1.03; width across

intermediate acetabula, male 1.18-1.23-1.28, female 1.60-1.65-1.71 mm.

Colour, dorsally, reddish brown, lateral margins of pro- and mesonotum black, mesopleurae with longitudinal black stripes, not reaching hind margin. Hind margin of metanotum dark.

Length of head 0.46-0.50-0.52; posterior width of vertex 0.40-0.40-0.41; median length of pronotum 0.33-0.36-0.40; median length of mesonotum 0.97-1.06-1.21 mm. Length of antennal segments, male I = 0.70-0.73-0.78, II = 0.45-0.47-0.48, III = 1.10-1.12-1.15, IV = 1.08-1.16-1.20; female I = 0.69-0.71-0.73, II = 0.39-0.40-0.41; III = 0.98-1.00-1.03, IV = 1.05-1.06-1.07 mm.

Male, first genital segment with a very broad depression Fig. 171.

The females from Kabel have the colouration of *T. parva* Kenaga (i.e. a short median longitudinal dark mark at hind margin of mesonotum). KENAGA 1941 states that *T. fusca* never has this mark. His specimens, however, were all collected in S.W. Amazonas (R. Eiru, R. Juruá). The present author prefers to bring the aberrantly coloured but structurally identical females in *T. fusca*, until more is known of the species of *Telmatometra* occurring in Suriname and the variation of populations there. The males studied all have the colouration and genital characteristics as described for *T. fusca*.

***Trepobates taylori* (Kirkaldy, 1899)**

Kallistometra taylori KIRKALDY, 1899, p. 28-29 (Jamaica).

Trepobates comitalis; DRAKE & HARRIS 1932, p. 117-118 (Texas, Grenada).

Trepobates committiales; HYNES 1948, p. 347, 356 (Trinidad, Tobago).

Trepobates taylori; DRAKE & CHAPMAN 1953, p. 112 (U.S.A., México, Central America, Colombia, Venezuela, Perú, Antilles).

Trepobates taylori; COBBEN 1960, p. 13-15, fig. 3-5 (Aruba, Curaçao, Bonaire).

Trepobates taylori; ROBACK 1966, p. 212-213 (Perú).

U.S.A., Arizona, New Mexico, Texas; MÉXICO, Chihuahua, Durango, Tamaulipas, San Luis Potosí, Aguascalientes, México D.F., Jalisco, Michoacán, Puebla, Guerrero, Oaxaca, Vera Cruz; "Central Ameri-

ca''; COLOMBIA; VENEZUELA, Falcón, Aragua; PERÚ, Loreto; BRASIL, Pará, Amazonas. – GREATER ANTILLES; LESSER ANTILLES.

VENEZUELA: Aragua, Maracay, *P. 2128*, 15.XI.1958, 3 ♂, 2 ♀ macr. (P. H. v. Doesburg jr., L).

BRASIL: Amazonas, Lower Rio Solimões, Paramá do Careiro, Divinópolis, *A. 223*, 29.VII.1961, 1 ♀ macr. (E. J. Fittkau, A).

Pará, near Santarém, Cacual Grande, *S. 241*, 26.VIII.1950, 1 ♀ apt., 1 ♀ macr. (H. Sioli, A).

Macropterous form:

Length, male 3.25–3.50–3.65, female 3.80–3.90; humeral width of pronotum, male 1.12–1.15–1.19; female 1.28; width across intermediate acetabula, male 1.31–1.39–1.48, female 1.62–1.67 mm.

Colour, black and yellow, very variable.

Male, anterior femur with a distinct ring-like constriction at apex, intermediate femur and base of tibia with erect hairs longer than half the width of the respective segment, on inner side. Genital segments not noticeably hairy ventrally, the first without conspicuous tufts of brown hairs.

Female, antenna with second segment distinctly shorter than third. Apices of connexivum not strongly projecting, last segment of abdominal venter not ciliate at apex.

Apterous form as macropterous, somewhat smaller and with reduced pronotum, hemielytra absent.

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EXPLANATION OF FIGURES

- Fig. 131. *Limnogonus ignotus*, male, from Suriname: apex of abdomen.
 Fig. 132. *Limnogonus profugus*, male, from Amazonas: apex of abdomen.
 Fig. 133–134. *Limnogonus franciscanus*, apex of abdomen: 133, male, from Venezuela; 134, female, from Barbados.
 Fig. 135–136. *Limnogonus hyalinus*, from Suriname, apex of abdomen: 135, male; 136, female.
 Fig. 137. *Limnogonus recurvus*, male, from Suriname: apex of abdomen.
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 Fig. 140. *Limnogonus lotus*, male, from Suriname: apex of abdomen, dorsal view.
 Fig. 141. *Limnogonus lubricus*, male, from Suriname: apex of abdomen, dorsal view.
 Fig. 142. *Limnogonus celeris*, male, from Mato Grosso: apex of abdomen, dorsal view.
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 Fig. 161. *Brachymetra lata*, from Suriname, left part of head.
 Fig. 162. *Brachymetra shawi*, male, from Suriname, paramere.
 Fig. 163–164. *Rheumatobates crassifemur esakii*, male, from Suriname: 163, antenna; 164, posterior trochanter and femur.
 Fig. 165. *Rheumatobates crassifemur schroederi*, male, from Pará, apex of antenna.
 Fig. 166–167. *Rheumatobates klagei*, male, from Amazonas: 166, antenna; 167, posterior trochanter and femur.
 Fig. 168–169. *Rheumatobates trinitatis*, male, from Guadeloupe: 168, antenna; 169, anterior leg.
 Fig. 170–171. *Telmatometra fusca*, male from Suriname: 170, genital clasper; 171, genital segments, ventral view.

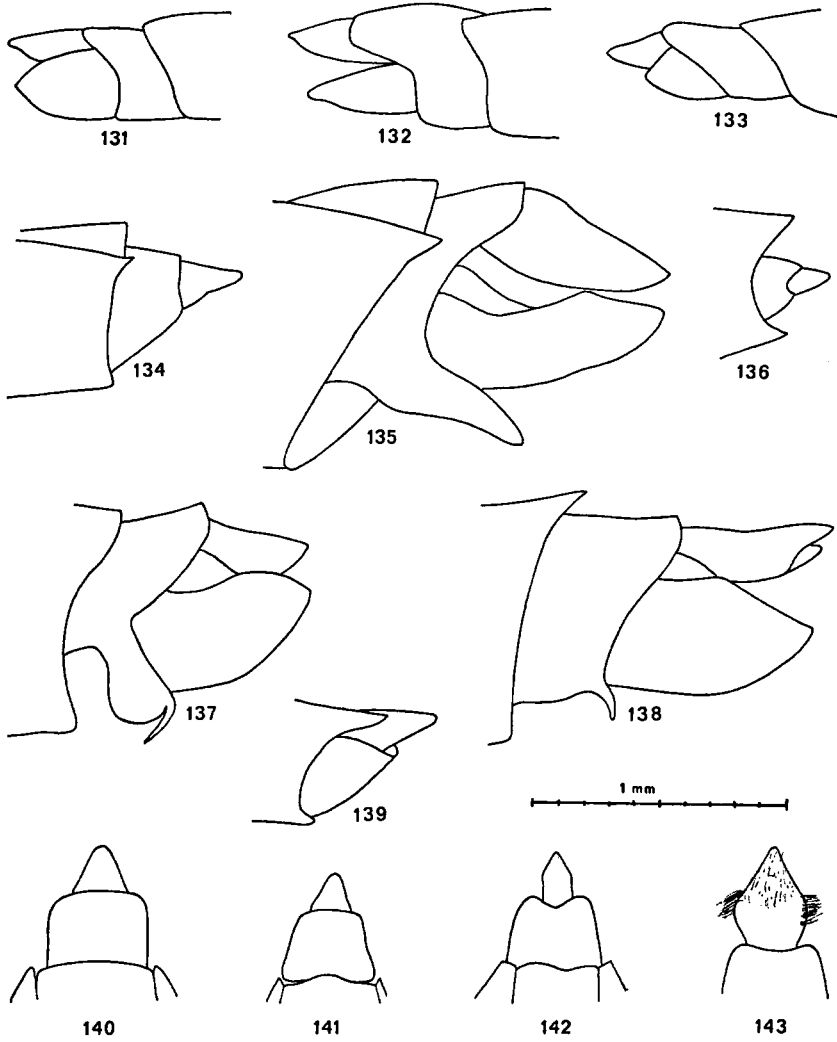
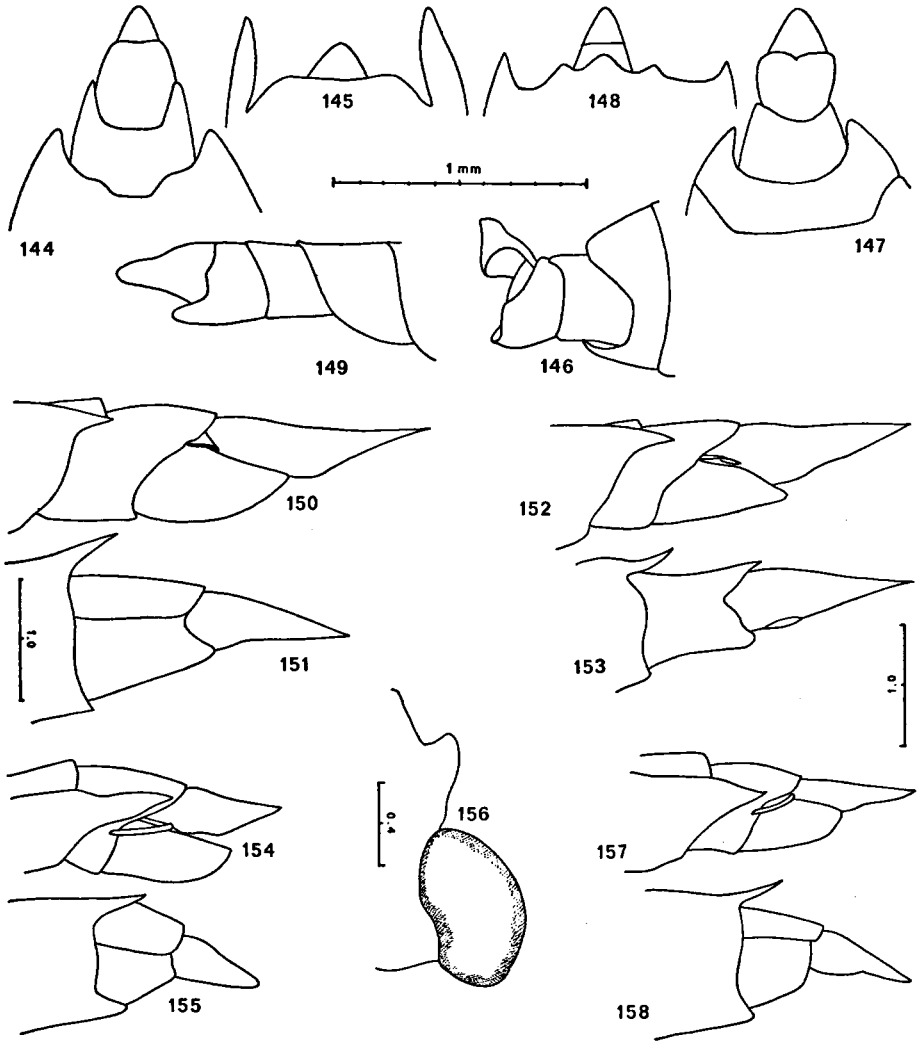
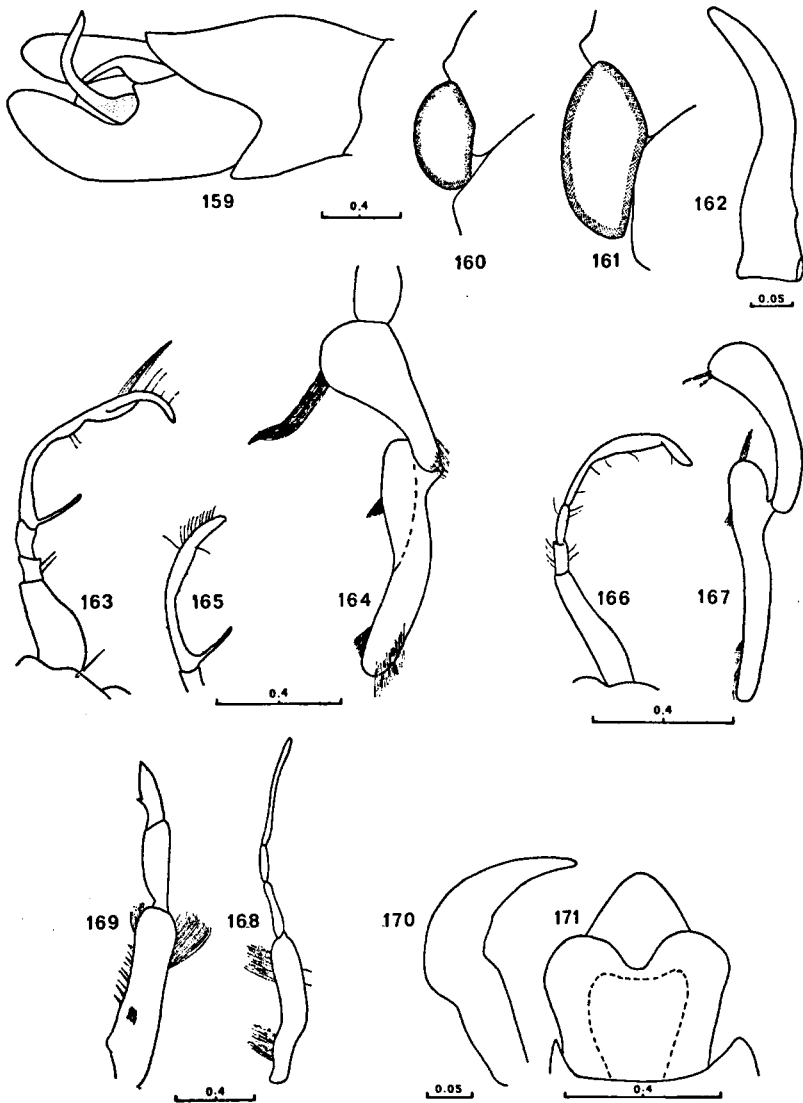


Fig. 131-143: Explanation on p. 135.



Figs. 144–158: Explanation on p. 135.



Figs. 159–171: Explanation on p. 135.